AIRBUS GROUP SE

COMPANY REPORT

AEROSPACE & DEFENCE INDUSTRY

6 JANUARY 2017

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More production – weak competition

With a major backlog into the downturn of the market

- Civil aircrafts have 6,600 aircraft orders on backlog
- The business cycle for civil aircrafts is turning down momentarily with few new orders coming in, while 33,000 new aircrafts are expected to be ordered within the next 20 years
- Airbus is cautiously accelerating the enhancement of production facilities from 659 to 949 aircrafts until 2019
- New market entries of Embraer, Bombardier & Co are receiving fewer orders than expected holding 22% of the market, with new wide-body competition from a Russian-Chinese JV maybe coming 2025. The discontinuing of the B747 will give 100% market share in very large aircrafts to Airbus
- Defence & Space is expected to grow with government budgets while a disinvestment strategy will bring free cash flow to the company. Helicopter sales are still down as in the previous year with improvements expected from 2019. However, 50% revenue from services is holding helicopter revenues stable
- Airbus as a Group is showing high growth potentials due to the overall increasing market in civil aircrafts. The 2017 year-end Market Cap is forecasted to be 74,400M€ compared to 48,557M€ as of 30/12/2016

Company description

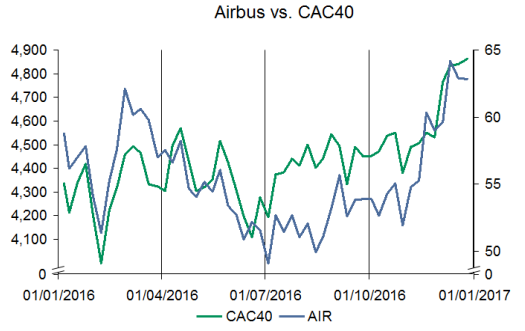
The Airbus Group is the second largest Aerospace Company in the world in regards to aircrafts produced. In addition to obtaining 70% of revenues from Civil Aircrafts, Airbus is also active in Defence & Space (20%) and Helicopter (10%). It is present in all major countries with sales and service points but producing only in France, Germany, Spain, UK, China and the US.

Recommendation:	**BUY**
Price Target FY17:	**96.28 €**
Price (as of 6-Jan-17)	**65.14 €**

Reuters: AIR.PA, Bloomberg: AIR:FP

52-week range (€)	48.07-64.98
Market Cap (M€)	48,557
Outstanding Shares (m)	772,7

Source: Bloomberg



Source: Bloomberg

(Values in M€)	2015A	2016E	2017F
Net Sales	64,450	65,369	79,832
Net Sales growth	6.16%	1.42%	22.13%
Net Profit	8,851	8,702	12,397
NET CAPEX	3,433	3,772	4,686
P/E	0.76	0.74	0.93
Net Income	2,698	761	2,148
EPS	3.44	0.98	2.78
Debt/Equity ratio	9.9%	7.4%	7.7%

Source: Analyst's Estimates

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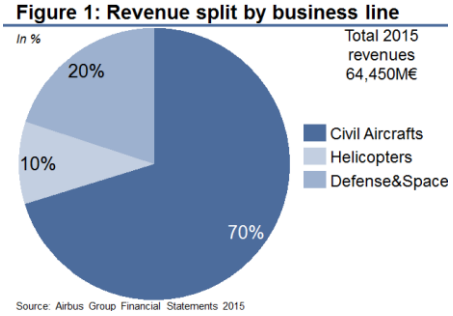
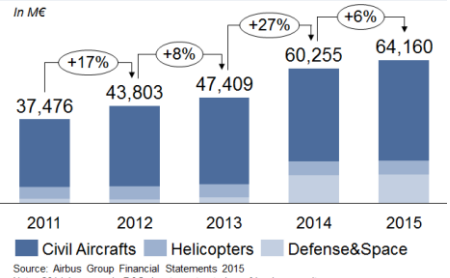
Company overview

Figure 1: Revenue split by business line



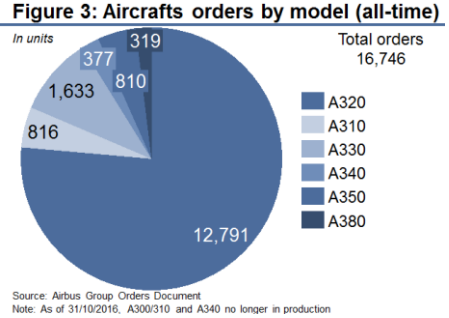
Source: Airbus Group Financial Statements 2015

Figure 2: Group revenue evolution



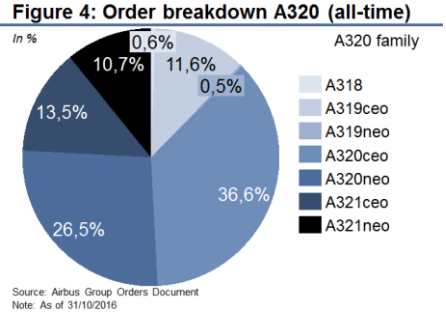
Source: Airbus Group Financial Statements 2015
Note: 2014 increase in D&S due to restructuring of business unit

Figure 3: Aircrafts orders by model (all-time)



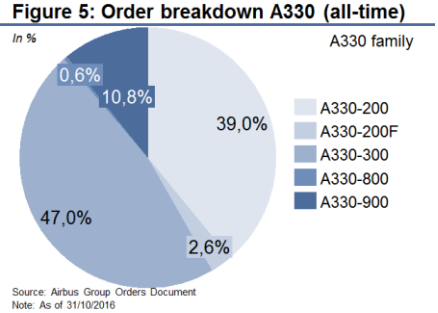
Source: Airbus Group Orders Document
Note: As of 31/10/2016, A300/310 and A340 no longer in production

Figure 4: Order breakdown A320 (all-time)



Source: Airbus Group Orders Document
Note: As of 31/10/2016

Figure 5: Order breakdown A330 (all-time)



Source: Airbus Group Orders Document
Note: As of 31/10/2016

The Airbus Group SE consists of three operating business units: Civil Aircrafts, Defence & Space and Helicopters. Each will be presented individually in the following paragraphs:

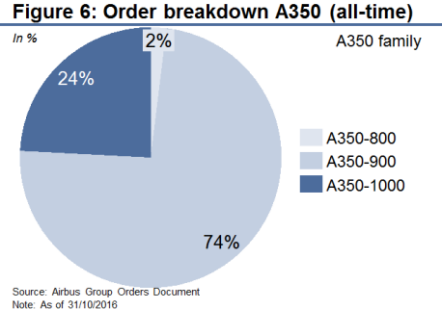
Civil Aircrafts

The aircrafts produced service the transportation of people, civil aircraft fleet, and goods, cargo fleet. Key revenue driver here is the A320 family. It is by far the most sold product of Airbus, accounting for around 80% of this business line's revenues. The base model is the A320, which is 38m long. Three derivatives exist: the 6m shortened A318, the 4m shortened A319 and the 7m stretched A321, which is the longest version with the highest passenger capacity. The A320family was originally introduced in the 80's but modified several times. A completely new development, also called a clean-sheet design, is not expected until 2025. In 2016, a new engine option (neo) was introduced. It promises to lower the operational costs and increase the competitiveness against its main market rival from Boeing.[1] Besides a new engine, minor aerodynamic improvements such as winglets were introduced. At the beginning, this project had major roll-out issues, mainly due to the engine manufacturer as Airbus itself does not build the engines. Pratt & Whitney, a unit of United Technologies Corp., builds the plane's geared turbofan engine for the neo version. Alternatively, CFM International, a venture between General Electric Co. and Safran SA can be chosen as engines manufacturer. CFM hasn't seen delays. The problem with Pratt & Whitney will be fixed in Q3 2016 and predictably back on track during Q4. In an analyst call, Airbus Management said that so far they do not intend to sue the OEM for this delay. However, this delay leads potentially to direct costs in two ways. First, some airlines cancelled their orders, such as Qatar Airways. The gulf carrier cancelled its first four deliveries in 2016 and the whole order of 80 aircrafts is at risk. Second, theoretically less revenue is generated. As of 30/11/2016 only 43 neos were delivered. Due to the holidays in the production facilities at the end of the year a total of only 48 are targeted. 12 neo aircrafts less than initially planned are produced at a list price of 107M€ each. However, the impact on the P&L is not significant: those early production aircrafts tend to be sold at a significant discount and the production slots are instead filled with ceo-versions. The current engine option (ceo) is still build and sold as long as the

[1] "These improvements will result in 20 per cent fuel savings per seat compared with current engine option (CEO) aircraft by 2020, along with two tonnes more payload, up to 500 nautical miles additional range […] and reductions in engine noise and emissions." Source: Airbus

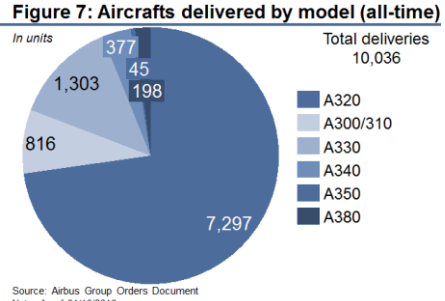
order books allow. Nevertheless, from 2022 a complete shift of production from ceo to neo is expected for the purpose of this analysis.

Figure 6: Order breakdown A350 (all-time)



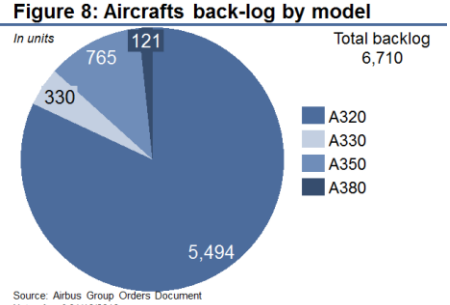
Source: Airbus Group Orders Document
Note: As of 31/10/2016

Figure 7: Aircrafts delivered by model (all-time)



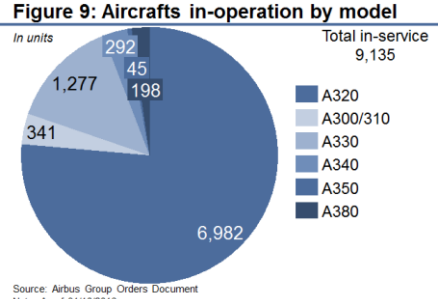
Source: Airbus Group Orders Document
Note: As of 31/10/2016

Figure 8: Aircrafts back-log by model



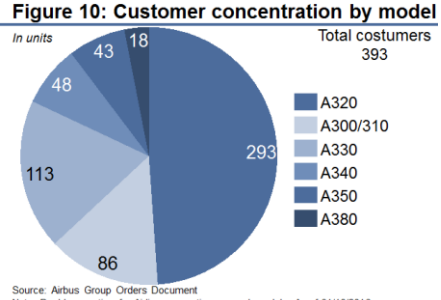
Source: Airbus Group Orders Document
Note: As of 31/10/2016

Figure 9: Aircrafts in-operation by model



Source: Airbus Group Orders Document
Note: As of 31/10/2016

Figure 10: Customer concentration by model



Source: Airbus Group Orders Document
Note: Double counting for Airlines operating several models, As of 31/10/2016

Thousands of orders from clients lead Airbus' Management to plan a continuous ramp-up of production until 2019. Besides expanding existing production lines, new plants recently opened in the US and China in order to be closer to the customers and the high-growth markets of the future. For more details on the historical and forecasted balance sheet development see Annex 1 and 2. On the other side of the Atlantic in the USA, main competitor Boeing offers its B737 in this class. A new version called "MAX" is currently developed. Airbus claims to have 14% less fuel consumption per seat (A321neo vs. 737MAX9), a 7'' wider cabin, a 1'' wider seat and more total seating capacities.

Second value driver is the A330 which was introduced in 1994. In contrast to the A320, this version offers more seats on a longer range. Offering two aisles classifies it as "wide body". As with the A320, the A330 is currently updated to A330neo versions called -800 and -900. At the end of 2016, it is expected to be assembled in the final production line (FAL) with extensive flight tests following. At the end of 2017, first deliveries are expected to carriers such as TAP. This aircraft competes with the new B787 Dreamliner from Boeing.

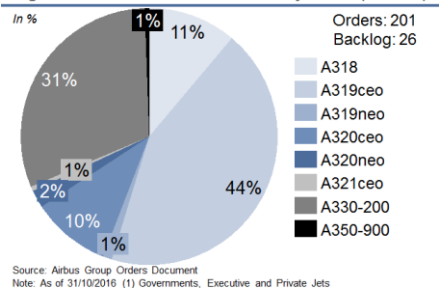
The latest model is the A350. Throughout 2016 & 2017 the ramp-up of production is underway. However, it progresses slower than expected with only 48 models delivered in 2016. A target of 80 deliveries for 2017 was announced. The slightly bigger derivative A350-1000 is currently tested and will be delivered from 2017. It is Airbus' answer to Boeing's dominant B777 which is also going to be renewed in the years to come.

The biggest aircraft sold is the A380, which holds up to 853 passengers. It was introduced ten years ago and just hit the break-even point in 2015 due to enormous development costs and a competiveness pricing. Nevertheless, sales are slowing down and production will be decreased to 12 A380s per year by 2018. Those clients nowadays favour more fuel-efficient twin-engine planes. However, congested major hub-airports such as Heathrow or Tokyo and expected air traffic growth of 100% within the next 20 years might support sales of this aircraft in the long-term on specific high traffic routes. Airbus is also pitching ideas about new plane layouts with an increased seat density to costumers. It is in competition with Boeing's iconic B747 which will go out of production in the near future.

The civil aircraft business line accounts for 70% of the Airbus Group revenues. Those are realized when a plane is handed over to costumers including a risk transfer. Therefore, production rates primarily determine revenues. Besides

airlines, also high net worth individuals and governments can order plans. As the numbers of ordered aircraft are by far lower for those VIPs and the mentioned cargo planes, demand will be assumed to be stable in the production forecast. Airbus intends to produce 650 aircrafts in 2016. As a result, a forecast of production rates and corresponding pricing will be the focus of the value analysis. The market is highly cyclical with signs of a weakening at the moment due to low fuel prices and previous years of record sales. However, Airbus still has a backlog for eight full years of production. Besides main rival Boeing, Airbus faces currently new competition from Bombardier and Embraer and in the near future from the Russian company UAC and the Chinese state-owned company COMAC.

Figure 11: Other customers[1] orders by model (all-time)

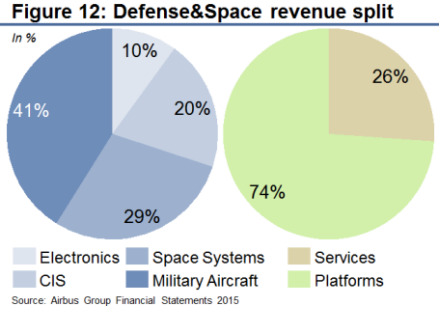


Source: Airbus Group Orders Document
Note: As of 31/10/2016 (1) Governments, Executive and Private Jets

Defence & Space

The second line of business is Defence & Space with a 20% contribution to the group revenues. "Airbus Defence and Space is well placed to play a leading role in the markets for future unmanned aerial systems (UAS), as well as combat, transport and intelligence, surveillance and reconnaissance aircraft (ISR). Some of the products armed forces can rely on are the swing-role combat aircraft Eurofighter Typhoon, the multi-role military airlifter A400M and the tanker aircraft A330 MRTT."[2] The former is a plane build for refuelling fighter planes in flight. As of year-end 2016, 28 of those are in service with a number of militaries, first and foremost the Australian Air force and European militaries. It is currently updated with high R&D expenditures to achieve a higher thrust in flight and with the military equipment. The A400M also offers a feature to refuel other planes. However, it is mostly used to transport equipment and military personnel. This aircraft is still struggling from quality issues. Some cracks in the fuselage were discovered in 2015 and billions of provision accounted. Meanwhile, additional capabilities are added to the plane. Light military planes such as the C295 are also offered. In the Space business, Airbus is providing space rocket services, in joint venture with other companies. Boeing is already producing a great variety of products in this sector and is more established than Airbus. Moreover, UAC, Embraer, BAE, Raytheon, Leonardo-Finmeccanica, Lockheed, Oboronprom and Northrop play in this market.

Figure 12: Defense&Space revenue split

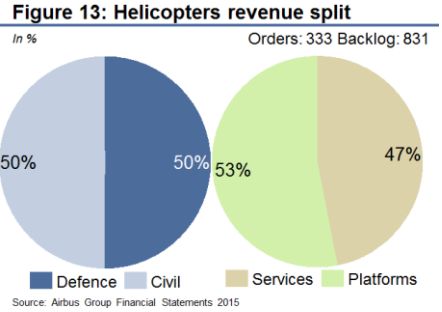


Source: Airbus Group Financial Statements 2015

Helicopters

Airbus is the biggest producer of helicopters and worldwide market leader here. Three major market competitors can be identified: Bell Helicopters, Augusta Westland and Sikorsky Helicopters. The last two are incorporated within other

Figure 13: Helicopters revenue split



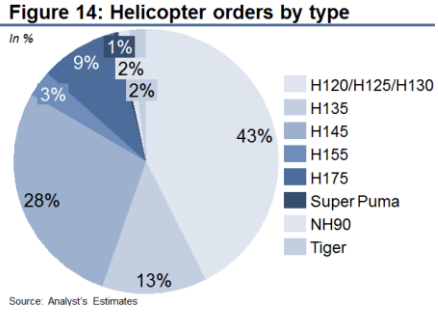
Source: Airbus Group Financial Statements 2015

[2] Source: Airbus

groups what will be explained later in greater detail. The Airbus revenue is driven by products such as H145 and H175. Furthermore, combat helicopter such as the NH90 are build. In total 10% of the group revenues are generated here. The market is mainly driven by the Oil & Gas sector.

For the consolidated P&L of the Group please see Annex 3.

Figure 14: Helicopter orders by type



Management & Governance

Organisational structure

Besides the three previously mentioned business lines, the Airbus Group has a wide portfolio of investments.[3] The Group is undergoing a strategic review resulting in divestments in the Defence & Space business line. It began in 2013 with the renaming of EADS Astrium into Airbus Defence & Space and the organisational merger of Airbus Military, Astrium and Cassidian. This decision was well received by the markets as the European military budgets were declining and this merger gave possibilities for synergies and job cuts of 5,000 employees. In 2014, it was decided to sell some non-essential business unit of this business line including its communication business, Fairchild Controls (avionics and hydraulic systems for aircraft), Rostock System-Technik (provider of aircraft engineering services and cabin simulators), AvDef (in-house charter airline which also trains French military pilots), ESG (software business) and a fractional sale of its security and Defence electronics businesses. As strategical important are military aircraft, missiles, satellites and rocket launchers. Those disposals were already executed. Those presented a revenue of 2,000M€ out of 14,000M€ of the Defence business at the time.

Figure 15: Employees by country and business line

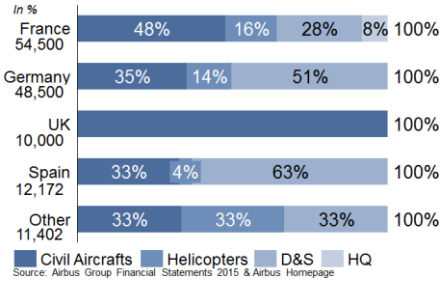
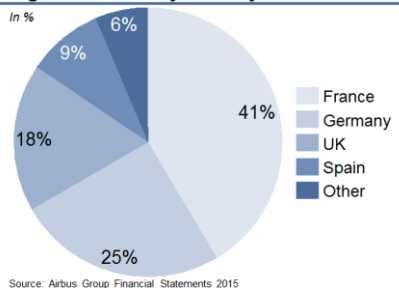


Figure 16: PPE by country



Airbus Defence Electronics was evaluated as available-for-sale at the beginning of 2016. On 18 March 2016, the Airbus Group reached an agreement with affiliates of KKR & Co. L.P. (the acquirer) to sell its defence electronics business, a leading global provider of sensors, integrated systems and services for premium defence and security applications. The first cash inflow of the total value of 1,100M€ is expected in Q4 2016. Airbus will retain a 25% share for a maximum of three years for the business which generated sales of 1,000M€ in

[3] At year-end 2015, the total portfolio compromised 262 fully consolidate entities, 53 joint ventures and 19 associates which are accounted for using the equity method. Material fully consolidated investments include MBDA S.A.S., Atlas Elektronik GmbH and GIE ATR. Those and all other fully consolidated entities are assumed to be contributing to operating activities with regards to this valuation. The joint venture and associates are non-operating as the merely stand for the portfolio investment strategy of Airbus. Hence, they are excluded from the cash flow valuation and added with fair value to the operating value at the end. Additionally, Dassault Aviation shares are qualified as held-for-sale. Those are being sold over a long time horizon. The latest transaction was executed in June with a capital gain of 528M€. The remaining investment represents 9% of Dassault Aviation's share capital.

2015. Reason being, the critics of the German Defence Ministry who is the single biggest client. This sale will terminate the current refocusing of the Defence & Space unit.

Airbus is a truly European project due to its history. It began in the 70's as reaction to the dominance of US manufacturers. No national supplier in Europe was able to face them with a competitive aircraft product. Therefore, Germany, France and the UK decided to form the "Airbus Industrie" partnership and build its first jointly developed jetliner, the A300. Spain joined the consortium in 1971 with a 4.2% share. The United Kingdom later dropped its strategic involvement but remained important as supplier for wings, as it is still today. Currently, the Airbus Group is headed by Germany and France. Additional factory sides are installed in the UK and Spain. As for the UK, no significant impact is expected regarding the Brexit decision. The details are expected to be an open issue until 2018. Nevertheless, the Management team confirmed that the wing manufacturing in the UK plant is extremely competitive regarding costs and quality. The normal level of investments in order to replace depreciated assets will be maintained and no closure of the plant is considered.

The Group Management team consist of Tom Enders (CEO Airbus Group), Harald Wilhelm (CFO Airbus Group), Marwan Lahoud (Chief Strategy & Marketing Officer Airbus Group), Fabrice Brégier (COO Airbus Group and President Airbus), Guillaume Faury (President Airbus Helicopters) and Dirk Hoke (President Airbus Defence & Space). The relation between Tom Enders, from Germany, and Fabrice Brégier, from France, is reportedly frosty as the recent restructuring programme (see below) sparked tension. For the company it is important that everything is in balance: beginning at the top with a board of directs which has to be adequately mixed by nationalities, down to the burdens of restructuring programmes where job cuts are expected to be shared fairly among member states. Potentially, a non-unified management team could pose a danger to the company's well-being when fast decisions have to be taken for or against a new airplane design, where to invest in the future or what production output the final assembly lines in the world should produce. Looking into the past it becomes clear that Governance became more and more transparent. Airbus is much more a "normal" company than it was decades ago. If this trend is to be continued than it will become a company which follows entirely the market and where no national stakeholders decide or vote on strategic important decisions in their favours anymore. This will be discussed in detail in the next paragraph.

Shareholders

As of 30.09.2016 two main classes of shareholders can be identified: On the one hand, free floating shares with institutional and retail investors hold 73.6% of the equity. On the other hand, shareholder agreements with SOGEPA (a French holding company owned completely by the government of France), GZBV (German government holding vehicle) and SEPI (Spanish state holding company) account for 26.4% of the equity.

Figure 17: Top Shareholders

	Equity (%)
Government of France	11.1%
Government of Germany	11.1%
Government of Spain	4.18%
Capital Research & Management	4.18%
PRIMECAP	2.39%
Lyxor	2.13%
OppenheimerFunds	1.48%

Source: 4-traders.com

The involvement of Germany and France used to be quite significant. Besides the financial interest also domestic jobs are at risk with every decision taken at the management level so the governments paid close attention. However, that status had to change in order for Airbus to be a flexible market participant: "France is cutting its ownership of Airbus as part of an agreement to reduce the direct influence of the French, German, and Spanish governments over the company. Reached in the wake of a failed merger with defence contractor BAE Systems Plc, the December 2012 shareholder accord is a step toward Airbus becoming a "normal" firm guided by market forces."[4] Let alone in 2014 the government sold 451M€ of its stake to institutional investors. After all, any shareholder is prohibited from holding more than 15% of the share capital with the target for France and Germany of 12% and for Spain of 4%. All countries together cannot hold more than 30% of shares. Today, the holding companies of the countries are no longer allowed to influence the daily operations of the company or to designate Members of the Board of Directors or management team. They can, however, propose new members of the board of directors at the Annual General Meeting as long as there is a balance among the nationalities of France, German and Spain in respect of the location of production facilities. The board of directors votes the CEO who proposes the members of the Executive Committee who are thereafter approved by the Board of Directors. A rule specifies that 2/3 of the Executives have to be EU nationals including the CEO and CFO.[5] Other institutional investors can be seen in the graphic. 772,714,000 shares are issued as of end of 2016.

Growth strategy

Revenue generation in civil aircrafts is mainly determined by production output. In order to grow revenues the increase of yearly deliveries is targeted from two different angles. First, production line capacities in existing factories are increased to take advantage of the full order books which would be enough for eight years of production. Second, international presence is increased. Civil

[4] Source: Bloomberg
[5] Source: Airbus Report of the Board of Directors, issued as of 26 February 2015

aircrafts already installed two FALs outside of Europe, one in the USA and one in China. The underlining strategies are very different: being closer to the growing demand for single aisle planes in Asia on the one hand. On the other hand, Airbus wants to support local jobs in the US to convince American customers of the political will to invest in the country and get more sales in return. Politics are the main reason for or against an aerospace product.

Defence & Space is specifically targeting the US in order to win US Military Defence contracts. That country accounts for the highest military spending worldwide. However, this strategy is highly complicated. Several political issues rose from US procurement officers giving contracts to non-US companies. The situation could be worsened for Airbus if the newly president-elect puts “America first”, meaning excluding all other contractors. However, Airbus Defence & Space is as of now the prime contractor for the Coast Guard’s procurement of 18 HC-144A Ocean Sentry maritime patrol aircraft and some other prestigious projects within the American military.

Restructering plans

On 30.09.2016 Airbus publically announced the merger of the Group structure with its Commercial Aircraft entity to form a new company structure. The purpose is to cut costs and to prepare the leaner structure for the digital transformation. Processes that are similar but performed from different teams, such as Technical Research, Strategy, Legal, HR and IT, will be merged and headcounts reduced, thereby eliminating redundancies. It is estimated that around 1164 jobs[6] will be lost (of which 429 in Germany, 640 in France, 39 in Spain and 54 in UK). The new entity will be led by CEO Tom Enders. Fabrice Brégier will become Chief Operating Officer (COO) and maintain his Presidency of Airbus Commercial Aircraft. Details of the merger and its impacts are now subject to discussions with the social partners on Group, national and divisional level. The risk exists that unions will try to block this decision with defensive measure, such as strikes.

The merger provides the opportunity to introduce a single Airbus brand for the Group and all its entities, effective January 2017. By this analyst´s estimates, which can be seen in Annex 4, cost saving of roughly 220M€ on a yearly basis could be achieved if all jobs were to be cut and not shifted. This includes a country salary adjustment and indirect costs such as IT and HR savings.

The restructuring was already discussed at the Financial Times on the 18/09/2016. The share price reacted with a slight increase. The decision was unexpected by the markets but not received as a great improvement. Compared

[6] Source: Handelsblatt

to the last restructuring with a reduction of 8,000 jobs this announcement seems to be insignificant. Also compared to rival Boeing, which cut 6,115 jobs in 2016 and plans further job reductions in 2017.

WTO

For the last 12 years, Boeing and Airbus are suing each other for unfairly received government subsidies. Boeing is in those cases supported by the US government and Airbus by EU representatives. According to the WTO, Boeing started in 2004 with accusing Airbus of being subsidized by the EU. 2010 was the WTO panel report circulated for the first time and directly appellate by Airbus in 2011.

The schema works as follows: Airbus is getting billions of Euros in low-interest loans for new aircraft developments ("launch aid"). If the commercialisation of this aircraft program is successful, Airbus has to pay back the loan. "In 2010, the WTO ruled those loans illegal because the European governments gave Airbus the money on highly favourable, non-commercial terms."[7]

On 22th of September 2016, the WTO ruled in favour of Boeing in recognizing that the EU did not unwind that illegal assistance within the given time frame.[8] However, the EU is most likely to appeal this verdict again. Other Boeing allegations of an unfairly supported A350 and A380 development were rejected by the WTO. Eventually, the issue could be potentially settled by a compromise between the two companies but this is rather unlikely. At the same time Boeing is facing a 9BN$ tax break investigation over the 777X programme by the WTO, which is to be determined in 2017.

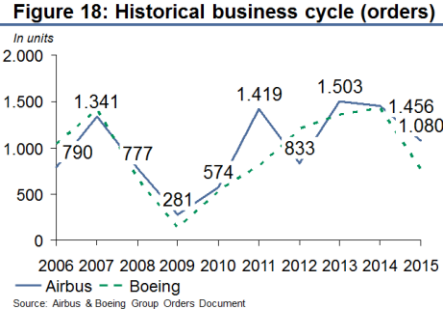
No such results are directly impacting this valuation as the WTO cannot directly impose fines on companies. A verdict might impose additional taxes on EU goods imported to the US if the US should file for this measure with the WTO.[9] "[…] whatever Boeing will say, nobody will have to go to the bank. There have never been any repayments and there never will be, it is not in the spirit of WTO."[10]

[7] Source: Seattletimes
[8] Source: WTO
[9] Source: Financial Times
[10] Source: Telegraph

Industry overview

Macroeconomic context

Figure 18: Historical business cycle (orders)

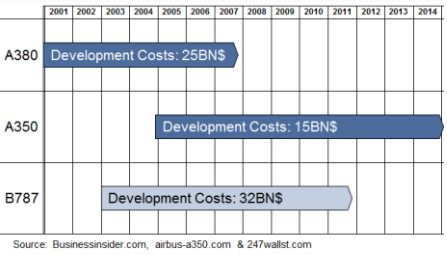


Source: Airbus & Boeing Group Orders Document

The aerospace industry is subject to business cycle volatility. Several macroeconomic factors are impacting the cyclical behaviour. First, oil prices have two contrary effects: Airlines most important cost factor is fuel. Therefore, having outdated and not fuel efficient planes is costly when oil prices are high. In times like this, orders for new planes are increasing drastically. On the other side, if oil prices are low the production costs are lower. Second, market liquidity determines the financing of planes as well as cost of capital for Airbus. Low interest rates and a monetary expansionary policy are allowing financing of these products more cheaply which helps to drive demand. However, only 10% of sales needed to be financed in 2015. Third, exchange rate volatilities influences the bottom lines of Airbus' P&L. Aircrafts are sold in USD but the reporting is done in EUR because it is a European company. Airbus is hedging against those fluctuations but financial gains or losses are still reflected in the bottom-line. Forth, long-term population growth & GDP growth are affecting the airline ticket demand. The latter seems to be the most important driver of air travel demand and hence aircraft demand. Fifth, inflation is driving prices and costs. Airbus is applying an escalating formula which is increasing the list prices by 1-5% per year in accordance with the inflation of prices in the procurement process.

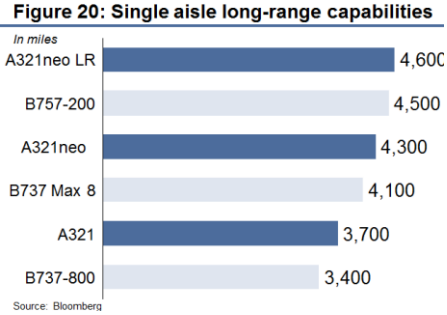
Product & regional trends

Figure 19: Latest new aircraft developments



Source: Businessinsider.com, airbus-a350.com & 247wallst.com

Figure 20: Single aisle long-range capabilities

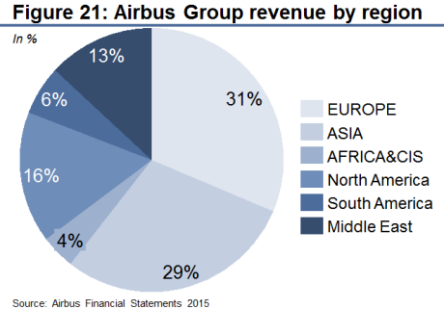


Source: Bloomberg

Besides the business cycle trend, it is important to focus on business model developments in order to anticipate future demand. There is an almost religious battle between the Hub-and-Spoke model, in which Airbus believes in, and the Point-to-Point model, which is represented by Boeing. This can be seen in the Airbus' faith in its largest aircraft, the A380, versus Boing's decision to discontinuing their equivalent B747. These ideas stand for different business models which airlines operate. Hence, it is impacting what kind of aircraft is developed. Figure 19 shows the investments necessary to develop new aircrafts and Annex 5 highlights the time until A350 and A380 hit break-even. To illustrate the business model differences: A passenger wants to travel from Boston to London. He can do so directly in the Point-to-Point model with a relatively small aircraft, such as the B787, A350 or even an A321LR. The same passenger would have to have a layover in New York in the Hub-and-Spoke models while using larger aircrafts, such as the A380, between the hub New York and the hub London. In this real-life example, Norwegian Airlines would fly directly from Boston to London with a B787 today and an A321LR in the future, whereas Virgin

Atlantic flies with a single aisle to New York and then with an A340 to London. This technique is more commonly used in dependence of distance: Emirates being an example of the Hub-and-Spoke for long-range flights and Ryanair standing for the Point-to-point model on short-haul flights. The former has the advantage that new routes can be added easily, it ensures a full capacity and customers usually feel more comfortable on larger aircrafts. Drawbacks include the necessity to take two trips for the customer, the hub is a potential bottleneck in peak hours and route scheduling is more complicated. The current slowdown of sales for the A380 seems to give right to Boeing's Point-to-Point model. However, due to several aerodynamic improvements of single-aisle twin-engine aircrafts, Airbus develops the A321neo LR for Trans-Atlantic flights from 2019. Therefore, opening new business models for the airlines. First orders came from TAP, Norwegian and JetBlue. Boeing has no equivalent aircraft in production.

Figure 21: Airbus Group revenue by region

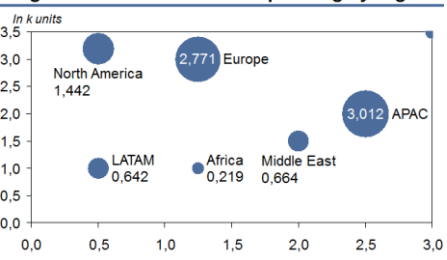


Source: Airbus Financial Statements 2015

Finally, the geographic positioning has to be discussed. As of today, Airbus Group revenues can roughly be divided into three blocks. The first one is Europe as historical base of Airbus. As important is Asia with almost 1/3 of revenues generated there. Especially India is noteworthy, with the airport of New Delhi being the busiest hub for A320s worldwide. The third block is made of Africa & CIS, South America, North America and Middle East.

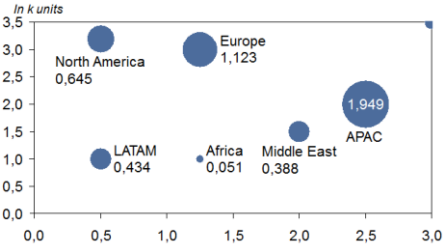
According to Airbus' Civil Aircrafts order files, APAC is the most important market with regards to aircrafts operating (3,012) as well as backlog (1,949). Europe follows with 2,771 aircrafts in use and a backlog of 1,123. The third biggest market is represented by North America (1,442 in-service / 645 backlogs). At the end of the list are the smallest markets: LATAM (642 / 434), Middle East (664 / 388) and Africa (219 / 51).

Figure 22: Airbus aircrafts operating by region



Source: Airbus Group Orders Document
Note: As of 31/10/2016

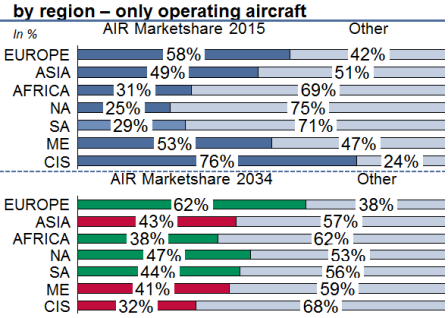
Figure 23: Airbus aircrafts backlog by region



Source: Airbus Group Orders Document
Note: As of 31/10/2016

As the decision-making-process of airlines is largely driven by political motivation and historic relations, they have to be taken into account in order to forecast future market shares. For this analysis, a sample of the 100 largest worldwide operating airlines (see Annex 6 for full list) was taken to analyse the geographical split of market share. The scope included the identification of Airbus, Boeing and other aircrafts ordered or in-service. Europe is expected to see an increase in market share from 58% to 62%. This expectation is mainly driven by the right-wing or protectionism move through many European governments. This would mean to prefer buying local or regional products instead of an US manufacturer as Boeing is. Asia's development is mainly driven by the success or failure of the Russian-Chinese joint venture. As this outcome does have a significant impact on the valuations a sensitivity analysis will be performed at a later stage.

Figure 24: Airbus market share of Top100 airlines by region – only operating aircraft



Source: 2015 based on Airlines Data, 2034 based on Analysts' Estimates
Note: As of 31/06/2016, Top100 worldwide airlines (Europe:26, Asia:37, Africa:8, North America:14, South America:7, Middle East:6, CIS:2) representing 62% of Airbus in-service

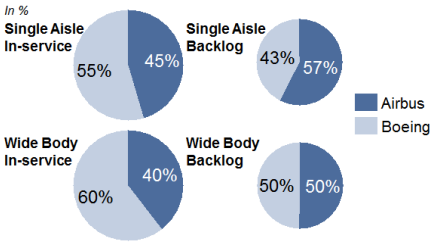
Currently Airbus Civil Aircrafts is holding a 49% share of the Asian companies in the Top100 airlines sample taken for this analysis. However, even within Asia differences in the market positioning of Airbus versus Boeing can be seen: Japan traditionally has had a strong relation to Boeing with flagship carriers such as ANA primarily using Boeing's 787. India is mainly Airbus orientated as many other smaller Southeast Asia countries. China is quite balanced. Africa is still an underdeveloped, small-size market and mostly covered by Boeing. Nevertheless, Airbus is gaining here with one of the most sophisticated airlines, Ethiopian Airways, flying the new A350-900. In line with population and GDP growth, the market is expected to grow and Airbus gaining 7% additional market share to come to a total of 38%. North America is an important player in the worldwide market. The US and Canada have a well-developed network of international and regional carriers. The operation of Airbus' local final assembly line will support the development and growth from 25% to 47% market share. South America's larger countries Brazil and Venezuela are currently struggling economically. However, as emerging markets with a growing middle class and population it can be expected that those markets will eventually recover in the near future. Airbus shows more new orders than in-service aircrafts at the moment, leading to an increase in market share from 29% as of mid-2016 (based on in-service aircraft) to 44% market share (based on the orders market share) from. 53% of the market in Middle East belongs to Airbus. Two current developments are giving the reasoning for the projection of the share falling to 41%. First, delays in the delivery of current new airplanes were received by a lot of anger in the market, especially by Qatar Airways. They rejected the acceptance of four A320neos in 2016. Moreover, Emirates as flagship customer of the A380 has made some request to modify this aircraft and equip it with a new engine option. Airbus' Management is not keen on this idea and so it can be reasonably expected that the relation might suffer. The CIS region is currently showing a small backlog. On a negative note for Airbus, more and more operators are ordering Boeing products. Their primarily use of Airbus was a historic relic, started during the cold war. As the relationship between the US and Russia is improving, especially with the new president-elect Trump, the Airbus market share is expected to drop from 76% to 32%. In addition, the new Russian-Chinese joint venture might have an impact here that is why a sensitivity analysis is performed at a later stage.

The defence market is mostly driven by government defence budgets. During the last years a decrease in government spending was observed. In 2014, the total worldwide market was worth 1,602BN$. However, due to the new President in the USA, which is the largest military market in the world, a slight increase of military budgets should be expected over the coming years. By 2022, a total

worldwide market size of 2,015BN€ is expected. As this change is mainly due to the US, Airbus is not profiting fully as can be seen in the main value driver forecast section of this report. New US military contracts will most likely go to US companies such as Boeing. However, higher investments in the military of one country usually lead to a counter reaction by other countries which might feel threaten by the US. Also, Trump already announced that the US will spend less on NATO operations. These contributions of military equipment and soldiers have to come from EU member states most likely. Therefore, a revenue increase in Airbus Defence and Space from 12,728M€ in 2014 to 13,900M€ by 2022 is expected.

The helicopter market growth is mainly driven by one factor: the health of the oil & gas sector. Those companies are Helicopter's main client as they need those machines for getting staff to and from oil platforms. Due to a recent drop in oil prices the health of the industry is suffering. Hence, a lot of overcapacity can be found in the market. Since 50% of the revenues are made in Services, such as repair and maintenance contracts, Airbus is not suffering to the full extend. Even if the market is in a downturn, it is important to maintain the in-service aircrafts properly. Experts forecast an increasing demand in 2 years' time, well in line with the expected price increase of oil. Therefore, the current production output from 429 units is expected to increase by 2019 to 488 units and up to 575 units by 2022.

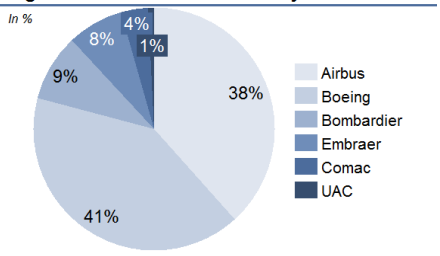
Figure 25: Airbus market positioning



Source: 2015 based on Airlines Data
Note: As of 31/06/2016, Top100 worldwide airlines, Airbus has 25, Boeing 17 exclusive contracts, excluding Cargo Planes, excluding buy options

Comparable companies

Figure 26: Total market share by orders 2016

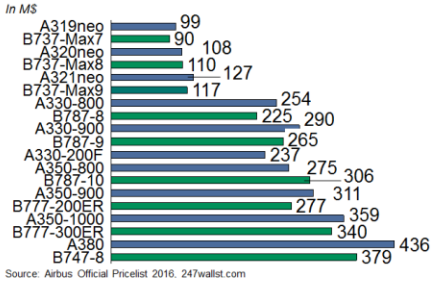


Source: Analysts' Estimates
Note: "Market" comprises SA, WB and VLA. Only those models above 130 seats were considered. Total number of orders in 2016: 1,334. Total number of orders SA: 1,054.

The Aerospace Industry is a highly competitive market. Entry barriers are extremely high while political considerations drive sales. One failed development of an aircraft can take the company to bankruptcy. It takes 5-10 years to design and develop a new airliner for 5-10BN$. Afterwards, the ramp-up of production is a heavy and cost-intensive task. That is why only a handful of companies are trying to enter this market, and far less are successful.

Airbus and Boeing present one of the best-know duopolies in the world. Both offer a wide-range of airplanes, from 100 up to 853 seats. A comparison of those is presented in Annex 7-10. In recent years, Airbus overtook Boeing regarding the numbers of new orders, while Boeing stills holds the majority of aircrafts being operated and produced at the moment. Generally, Airbus is preferred over Boeing for single-aisle aircrafts (A320) and ultra-large-aircrafts (A380). However, Boeing is preferred for wide-body jets (such as 787 and 777). Comparing those categories in detail shows the following: the A320neo has 8% lower fuel costs per seat than the 737Max8 which will be delivered from 2017. The range is similar with the Airbus traveling at Mach .82 compared to Mach .79. Boeings model

Figure 27: Aircraft List Prices



Source: Airbus Official Pricelist 2016, 247wallst.com

offers a wider range of seating possibilities (162-200 compared to Airbus' 165-189). The A320 is about 3M$ less expensive at a list price of 107.3M$ leading to a far higher backlog than the B737 achieved. See Annex 11 for the forecasted product prices. Range is usually an advantage of Boeing which is reflected in the comparison of A330-900(neo) and B787-9. Both offer similar seating arrangements (Boeing 290-420, Airbus 287-440). On the one hand, Airbus allows for a 10% cost saving in fuel costs per seat but the B787 reaches 2,000km further with a total range of 14,140km. Despite the fact that the B787 occurred higher development costs, it is 23M$ cheaper with a list price of 264.6M$. The next price category is opened with the A350-1000 and the B777-300ER with 355.7M$ and 339.6M$ respectively. The latter is by far more popular with airlines and will be replaced by the 777-8/9 in 2020. The A350-1000 is currently in the FAL with first deliveries following in 2017. As the 777X's entry into service (EIS) is relatively far away, the comparison here will build on its predecessor 777-300ER. Due to its age the Boeing loses in range (Airbus 14,800km, Boeing 13,700km) and fuel burn (-21% fuel costs per seat on the Airbus). Both offer a similar number of seats with 366-440 for the A350 and 365-550 for the B777. The Jumbo category is belonging to the A380 and B747. Boeing stretched and updated its Jumbo jet in 2008 but is likely to discontinue production in 2017. The A380 shows a 3% lower fuel cost per seat with a range advantage of 900km and a total of 15,200km. As it offers significantly more seats with a range of 544-853 (Boeing 410-605) giving higher revenue income streams it also costs more with a list price of 432.6M$ (Boeing 378.5M$). The two companies have a very different history and geographical set-up as described above. Boeing engages 157,000 employees, of which 80,000 work in Civil Aircrafts, compared to 137,000 at Airbus. Boeing does not produce helicopters but makes up for it with higher Defence revenues. It is the second largest defence contractor in the world and the largest US exporter in general. It is solely operating in its home market as it does not have FALs outside the US. Whereas Boeing published a revenue of 96,114M$ (net income: 5,176M$) for 762 deliveries in 2015, Airbus announced revenues of 64,450M€ (net income 2,698M€) for 635 deliveries in the same period. Both show a similar capital structure: Airbus as a group holds 99.6% of capital as equity whereas Boeing holds 97.6% of which 73.12% are held by institutional investors. The Top5 are Capital World Investors, Evercore Trust Company, Vanguard, Price T Rowe and Capital Research Global Investors.[11]

Attention has to be paid to 4-5 new competitors trying to capture market share in the above 100 seats segment. Brazilian aerospace company Embraer & Canada-based Bombardier traditionally produced smaller business and commercial

[11] Source: NASDAQ

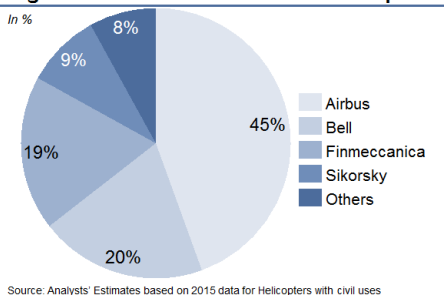
aircrafts under 100 seats. With global demand changing both companies are no targeting new markets. Out of 70,900 employees Bombardier engages 15,000 in the aerospace part of the business (they also build trains, where 50% of revenues are generated) producing 73 total deliveries in 2015 resulting in a revenue of 2,400M$ from commercial airlines and 7,000M$ from their business fleet. The new CSeries programme, aiming at commercial airlines, increased the number of seats to 130-160 and is now threatening the smaller versions of the A320 and B737. However, the programme's necessary heavy investments also put the company at risk of default. At the end, the Canadian government had to make a cash injection into the programme. Debt levels are still high compared to its peers with a debt to equity ratio of 2.91, leading to a credit rating of B2 (Moody's) or B- (Standard & Poors). The current dual class share structure is not received as investor-friendly since the Bombardier-Beaudoin family is holding 54% of voting rights. Most equities are held by well-known investment fund BlackRock and Vanguard as well as The Caisse de dépôt et placement du Québec. Despite all efforts, the programme so far is not a success with lower than expected orders. From 2009 until end of 2016 a total of 358 orders were received. In 2016, airlines such as Delta, Swiss and Baltic took delivery of the first CSeries with a discounted price which is expected to be 1/3 of the list price (60M€). A total of 15 deliveries are targeted in 2016 and 30 in 2017. "Even by 2020, output is projected to be less than one fifth the production rates for competing workhorse jets at Boeing Co. and Airbus Group SE."[12] Embraer has a similar profile: 18,000 employees build the E195 aircraft, reaching 101 commercial deliveries in 2015, resulting in revenues of 5,928M$ (Net income: 272M$). Compared to its peers, Embraer is relatively high leveraged with only 53.6% of its capital being equity. Of which 50.72% are held by institutional investors with the Top5 being: Brandes Investment Partners, Oppenheimer Funds, Baillie Gifford, Hotchkis & Wiley Capital Management and Barrow Hanley Mewhinney & Strauss. In addition, military aircrafts and a business fleet are offered. Some governments are pushing the development of state-owned national aerospace companies. COMAC (Commercial Aircraft Cooperation of China), a Chinese state-owned company established in 2008, is facing the competition of A320 and B737 with their own development: the C919. It is due to be delivered in late 2018 with 570 orders already placed by mainly Chinese airlines as of 2016. It will offer around 168 seats in a 2-class configuration and will be the second plane from that company which is already producing the smaller ARJ21 for regional airlines (up to 105 seats). As for efficiency, there is probably still a gap to Airbus and Boeing which means that the worldwide impact

[12] Source: Financialpost

of the C919 will not be significant.[13] From 2025, a wide body version called the C929 or C939 can be expected which might have the capacity of up to 290 seats. COMAC is not actively traded. Irkut, a subsidiary of the Russian state-controlled United Aircraft Corporation (UAC) is meanwhile developing the MC-21, which will offer 150-212 seats from late 2018. It relies heavily on western suppliers such as Pratt & Whitney for the engines. This aircraft achieved 192 orders by mainly Russian carriers as of year-end 2016. It is supposed to cost 72M$ in the base version.[14] The firm has 100,000 employees and offers a wide-range of aircrafts, including military applications to the market resulting in revenues of 4,900M€ (net income: 1,510M€). Public Joint Stock Company United Aircraft Corporation comprises some 30 companies representing Russia's aviation manufacturing sector, including PJSC Company Sukhoi, PJSC Irkut Corporation, JSC RAC MiG, JSC Sukhoi Civil Aircraft and others. It is relatively high leveraged with only 61.7% of capital being equity. Three groups of shareholders can be identified: 91% are held by the Russian Federal Agency for State Property Management, 5% by Vnesheconombank and 4% by private shareholders as free floaters. A big challenge that both completely new market entries face is trust. So far the C919 and MC-21 are not yet in production and did not prove their capabilities regarding efficiency and safety yet. That is why only domestic airlines pre-ordered those planes. In the years to come, both have to gain the trust of international airlines in order to be considered a successful programme.

Main competitors for the Defence market consist of: Boeing (company profile previously discussed), UAC (company profile previously discussed), Embraer (company profile previously discussed), BAE (Military: Tanks, Cyberwarfare etc., 82,500 employees, revenues of 20,500M€, 91.4% of capital is equity, 76% is held by institutional investors, Top3 shareholders include Schafer Cullen Capital Management, SEI Investments Management and Allianz Global Inv Fund Mgmt), Raytheon (Military: Missiles, Cyberwarfare etc., 61,000 employees, revenues of 23,247M$, 95% of capital is equity, 76.31% is held by institutional investors, Top3 shareholders include Vanguard, Blackrock and State Street) and Northrop (Military: B52 planes, Drones etc., 65,000 employees, revenues of 23,526M$, 90.4% of capital is equity, 81.08% is held by institutional investors, Top3 shareholders include State Street, Vanguard and Capital World Investors). Furthermore: Bell Helicopters (half of revenues from commercial helicopters, 50% from military helicopters, revenue of 3,500M$, part of Textron Holding), Leonardo-Finmeccanica (Military systems, additionally helicopter companies

Figure 28: Total market share in Helicopters



Source: Analysts' Estimates based on 2015 data for Helicopters with civil uses

[13] Source: Chinadaily
[14] Source: Flightglobal

Augusta Westland and PZL-Świdnik, 47,000 employees, revenues of 13,000M€, 60.3% of capital is equity, 49% is held by institutional investors, Top3 shareholders include Capital Research and Management Company, VA CollegeAmerica EuroPacific and DNCA Finance), Lockheed (Military systems, additionally Sikorsky Helicopters, 126,000 employees, revenue of 46,132M$, 83.3% of capital is equity, 79.92% is held by institutional investors, Top3 shareholders include State Street, Capital World Investors and Vanguard) and Oboronprom (Military system and civil helicopters, 271 helicopter deliveries in 2015, revenue of 2,000M€, not actively traded).

Figure 29: GDP growth is relating to civil aircraft orders

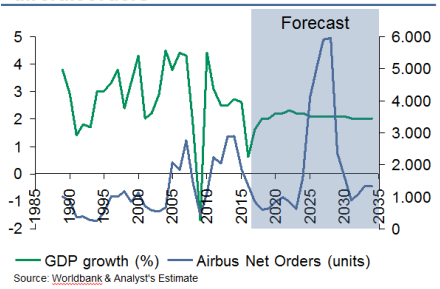


Figure 30: Government military budgets determine the Defense & Space revenues

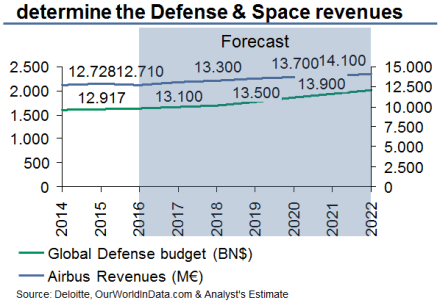


Figure 31: Oil prices show high correlation to helicopter deliveries

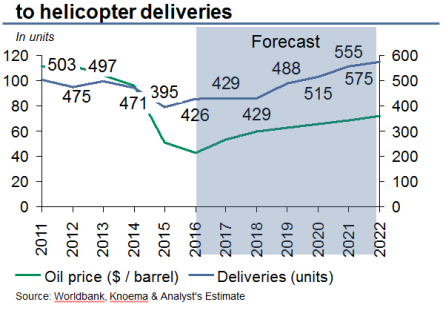
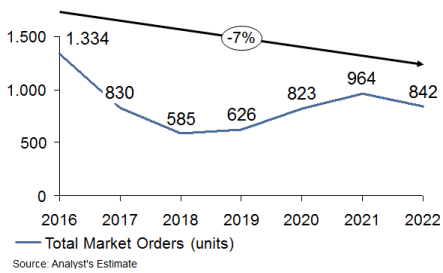


Figure 32: Forecasted business cycles I



Airbus is the market leader in helicopter. Main competitors include Augusta Westland and Sikorsky Helicopters. The former is a subsidiary of Leonardo-Finmeccanica and the latter a part of Lockheed.

Valuation

As all three business lines are well established businesses a Discounted Cash Flows (DCF) approach is chosen in order to determine the company value. Those values are added up in a sum-of-the-parts valuation. Major investments, which are consolidated in the Cash Flows and Balance Sheet of Airbus, are included in the corresponding business line and assumed to be operating. As for the non-strategic investments, those are subtracted from all financial accounts and added at the end to the company value with fair value. To cross-check a Multiple Analysis among peers is performed. To test the sensibility of the results, an analysis will be executed at the end in order to allow for a range of company value on critical variables.

Main value drivers forecasts

Based on a trend analysis, the next years seem to be determined by a downturn. The last years reached new highs and the aircraft manufactures locked in thousands of new orders. Due to this massive backlog and cheap oil prices the demand is slowing down by -7% until 2022.

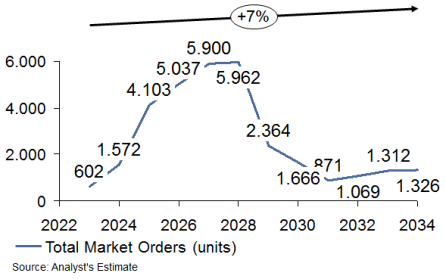
The expected demand is driven by, on the one hand, new aircraft orders due to higher demand for air travel. On the other hand, old aircrafts need to be replaced. Airbus and Boeing are publishing forecasts regarding future demand. Those studies are relatively close regarding their predictions. Larger aircrafts are more profitable on a per unit basis. However, the best-selling product is the single-aisle aircraft and this is where the future demand is focussing on. Out of the 33,070

new aircrafts until 2035, 23,530 are attributed to the single-aisle market. This is mainly due to the boom of low-cost carriers (LCC) such as Ryanair. Those are not only a common phenomenon in Europe and North America but also in the emerging markets such as India. In 2016, the largest single order for A320 ever came from an Indian LCC. As the A321neo LR is coming to market in 2019 this type of aircraft shows an incredible amount of variability and possibility of adaptation. As per trip costs of smaller planes are lower than those of big planes, new longer routes will become available to the traveller. A new kind of LCC will arise which will be specialised in intercontinental flights.

The biggest impact on the P&L of Airbus is coming from the aircrafts transferred to the customers. As soon as it is build, equipped, painted and tested it gets delivered to the airline, lessor or private customer. At this point all risks are transferred and the revenue can be booked in the accounts. As this is the most important factor in the forecast the production forecast for the coming years will be as follows (to be seen in detail in Annex 12 & 13): the A318 is expected to be discontinued. As of now only a handful of order were placed in the past with a decreasing trend and increasing competition from other aerospace companies. On the next stage, the A319 faces the same competition. It accounts for around 5% of A320family orders. 26 are expected to be built in 2016, of which so far zero new engine options. However, it is still possible to buy the current engine option which will eventually be replacing the ceo. This is expected to be at the end of 2022 when the A319 reaches 35 deliveries per year. The base model, the A320, currently accounts for 57% of the single-aisle order. For 2016, 304 are expected to be built including 48 neos. At the end of 2022, this is supposed to be at a level of 415 per year. The biggest A320 derivative, the A321, generates 37% of orders. 200 are forecasted to be delivered in 2016 and 240 until 2022 including neos. 2019 the A321LR will be introduced to the market. It is expected to be sold 30 times a year. As a result, the current update of production line will lead to a total of 720 single-aisle aircrafts from 2019.

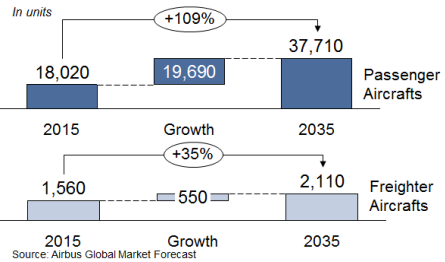
The wide-body portfolio consists of the A330 and A350. The smaller version of the A330 (-200) will be delivered 16 times in 2016, with the bigger derivative, the A330 (-300) totalling 38. Until 2022, the transition from ceo to neo is expected to be finished. Then the equivalents A330-800 and A330-900 are expected to come to a total of 24 units / 57units. The A350 is the latest state-of-the-art aircraft. Until 2022, a total of 120 deliveries are expected. 80% will be A350-900s and 20% the bigger A350-1000s. It is expected that the smaller A350-800 will only receive a handful of orders and is disregarded in this production plan. The B777 is the best-selling twin engine aircraft in the world. That is why only 20% of A350 orders are expected to be given to its direct competitor the A350-1000.

Figure 33: Forecasted business cycles II



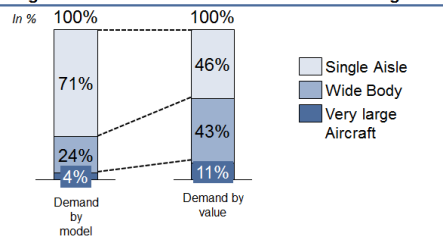
Source: Analyst's Estimate

Figure 34: Forecasted Air Fleet Growth



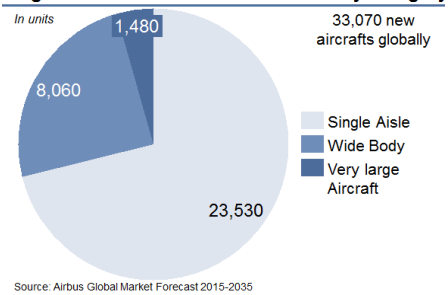
Source: Airbus Global Market Forecast
Note: Excluding demand for replacements of old aircrafts. Total passenger aircraft demand: 32,425. Total new freighter aircraft demand: 645 -> 33,070units for the whole market

Figure 35: Correlation between model and margins



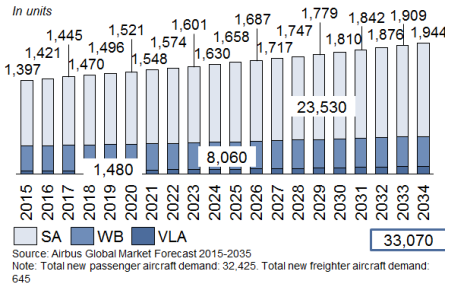
Source: Airbus Global Market Forecast
Note: Margins are also dependent on the product lifecycle with first production planes and late production planes delivering no profit while the established products deliver around 80% margin on around 60% of the list price. That is why high bulk discounts are possible.

Figure 36: Forecasted Fleet Growth by category



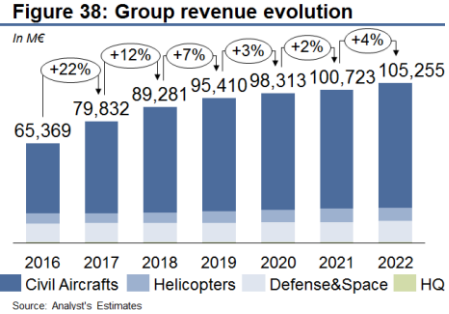
Source: Airbus Global Market Forecast 2015-2035

Figure 37: Forecasted Fleet Growth by category



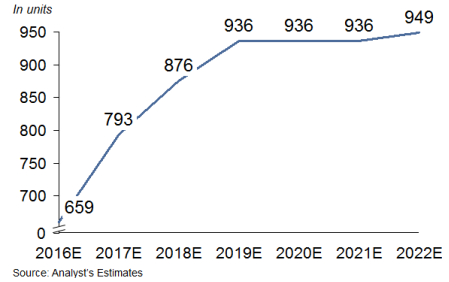
Source: Airbus Global Market Forecast 2015-2035
Note: Total new passenger aircraft demand: 32,425. Total new freighter aircraft demand: 645

Figure 38: Group revenue evolution



Source: Analyst's Estimates

Figure 39: Forecasted Airbus deliveries



Source: Analyst's Estimates

Figure 40: Cost of Debt – Ratings

	Long-term Rating	Outlook	Short-term Rating
Standard & Poor's	A	Positive	A-1
Moody's	A2	Stable	P-1
Fitch	A-	Stable	F-2

	Yield	Prob. Of Default	Recovery Rate	
Costs of Debt	0.91%	0.07%	49.5%	=0.87%

Source: Airbus Financial Statements 2015 & Analyst's Estimates

As for the "white elephant", the A380: current trends show a slowdown of production to one aircraft per month by 2018. Nevertheless, this analysis is projecting that it will be back on track from 2022 being produced 25 times a year.

The pricing consists of two factors. First, each year an escalation formula is applied which considers inflation and costs of material. Second, bulk discounts are granted according to actual amounts ordered and the general market environment. Nowadays, an average bulk discount of 40% on the list price can be observed.

Regarding the other two business lines, the following can be stated: the Defence & Space business line will suffer slightly from the divestments in the coming year. For 2016 this strategy will result in 200-300M€ less revenues.

Helicopters will show slightly higher revenues until 2019 due to improvements of operating efficiency. Thereafter, it is expected that the oil & gas market is turning around and bringing in more helicopter orders.

Cost of capital

A WACC is calculated in order to find the cost of capital corresponding to the capital structure and risk associated to the company.

The cost of debt are calculated using the yield of Airbus bonds in EUR (0.91%) and subtracting the probability of default for an "A" rated company (0.07%) with the recovery rate (49.5%). As a result, an rD of 0.87% is obtained.

By un-levering and re-levering of comparable companies in combination with the application of the CAPM the cost of equity is reached. It can be observed that the new rivals Embraer and Bombardier are higher leveraged than the comparable. In order to avoid distortion of results those are taken out. Usually the Civil Aircraft units are less leveraged, followed by Defence & Space and Helicopters. The debt to equity ratios of the three are as follows: 0.13, 0.16 and 0.39. Using the tax rate of 28.25%, the betas of the comparable as proxy of the market risk and an excess cash of 3,000M€ we obtain the following WACCs: 5.84% for Civil Aircrafts, 5.8% for D&S and 4.93% for Helicopters (Base Case).

Sum-of-parts valuation

After forecasting the Cash Flows for the three operating business units all the values can be added up. For Civil Aircrafts, the UFCF picture looks as follows:

Figure 41: Historical Free Cash Flow by business line

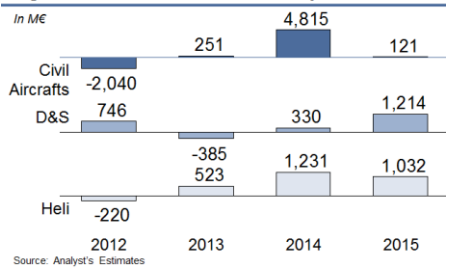


Figure 42: Forecasted Free Cash Flow by business line I – Civil Aircrafts

In M€

	2016	2017	2018	2019	2020	2021	2022
Aircraft produced	659 units	793 units	876 units	936 units	936 units	936 units	949 units
List price increase	1.1%	0.8%	0.8%	0.8%	1.1%	1.1%	1.1%
Revenues[1]	**46,059**	**60,232**	**69,431**	**74,410**	**76,613**	**78,123**	**82,055**
NOPLAT	**282**	**1,794**	**2,961**	**3,440**	**3,247**	**3,284**	**3,310**
+Depr.	1,408	1,508	1,659	1,832	2,033	2,091	2,152
-Net Capex	-2,111	-2,500	-2,795	-3,141	-2,417	-2,487	-2,559
-ΔNWC	-5,204	-6,886	-4,784	-2,815	-1,281	-1,095	-2,008
-Oth.Assets	-1,210	-5,776	-4,259	-3,279	-1,309	-1,145	-1,878
+Oth.Liab.	564	10,451	6,828	4,428	2,098	1,760	3,431
UFCF	**-6,270**	**-1,409**	**-392**	**464**	**2,370**	**2,408**	**2,447**
Perpetuity	Based on 2022 UFCF, g=1.61%, WACC= 5.84%					2023	**58,726**
ROIC		4.9%	7.4%	7.9%	7.0%	6.9%	6.9%

Source: Analyst's Estimates
Note: See Annex for detailed production list and P&L 1) Includes 5% revenue from services

The D&S unit:

Figure 43: Forecasted Free Cash Flow by business line II – Defense&Space

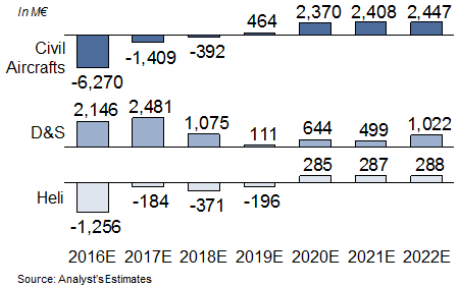
In M€

	2016	2017	2018	2019	2020	2021	2022
Revenues	**12,710**	**12,900**	**13,100**	**13,300**	**13,500**	**13,700**	**13,900**
NOPLAT	**417**	**316**	**384**	**383**	**408**	**404**	**423**
+Depr.	902	942	1,041	1,159	1,302	1,339	1,378
-Net Capex	-1,146	-1,539	-1,754	-2,020	-1,534	-1,578	-1,624
-ΔNWC	1,200	-842	-625	-330	-142	-127	-225
-Oth.Assets	-177	-2,708	-2,093	-1,756	-656	-591	-908
+Oth.Liab.	950	6,311	4,123	2,674	1,267	1,052	1,978
UFCF	**2,146**	**2,481**	**1,075**	**111**	**644**	**499**	**1,022**
Perpetuity	Based on 2022 UFCF, g=1.0%, WACC= 5.80%					2023	**21,522**
ROIC		5.04%	9.33%	11.19%	11.04%	11.69%	12.56%

Source: Analyst's Estimates
Note: See Annex for detailed production list and P&L

Finally, the Helicopter unit produces the following cash flows:

Figure 45: Forecasted Free Cash Flow by business line IV



Source: Analyst's Estimates

Figure 44: Forecasted Free Cash Flow by business line III - Helicopters

In M€

	2016	2017	2018	2019	2020	2021	2022
Helicopters produced	426	428	428	488	516	554	574
List price increase	1.1%	0.8%	0.8%	0.8%	1.1%	1.1%	1.1%
Revenues[1]	**6,300**	**6,400**	**6,450**	**7,400**	**7,900**	**8,600**	**9,000**
NOPLAT	**266**	**274**	**278**	**385**	**428**	**488**	**484**
+Depr.	409	428	476	533	602	620	638
-Net Capex	-515	-648	-735	-841	-693	-713	-733
-ΔNWC	-573	-879	-693	-329	-134	-125	-123
-Oth.Assets	216	-1,215	-909	-730	-290	-259	-408
+Oth.Liab.	-1,058	1,856	1,213	787	373	276	521
UFCF	**-1,256**	**-184**	**-371**	**-196**	**285**	**287**	**288**
Perpetuity	Based on 2022 UFCF, g=0.5%, WACC= 4.93%					2023	**6,535**
ROIC		4.67%	4.39%	5.52%	5.66%	6.34%	6.13%

Source: Analyst's Estimates
Note: See Annex for detailed production list and P&L 1) Includes 50% revenue from services

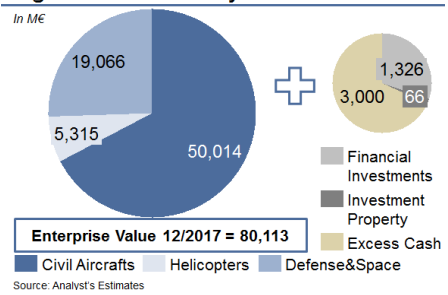
All three parts added up and discounted to year-end 2017 total 74,395BN€. Thereafter, investment property of 66M€, financial investments under the equity method of 1,326M€ and Excess cash of 3,000M€ are added as they were assumed to be non-operating. On the liability side, 5,713M€ of financial debt as of 12/2017 are added. Other liabilities such as upcoming legal settlements or unfunded pension funds are not applicable. After all, an equity value of 80,113M€ is reached (Base Case). Distributed among 772,7M share leads to a share price of 96.28€.

Figure 46: Valuation Data Table

	Civil Aircraft	D&S	Helicopter
Risk-free Rate	0.51% (France 10Y bond)		
Market Risk Premium	6.83% (using MCIW & CAC40)		
bE Airbus Group	1.19	bD	0.44
bE Aero Industry	0.89		
bE CivAir Comparab.	0.84	D&S/Heli	0.85
Net Debt/Equity CA	0.13	D&S 0.16	Heli 0.39
EURUSD FX	1.3 | 1.29 | 1.25 | 1.25 | 1.23 | 1.23 | 1.23		
Excess Cash	3,000M€		
Effective Tax Rate	28.25%		

Source: Bloomberg & Analyst's Estimates

Figure 47: SOTP as of year-end 2017



Source: Analyst's Estimates

Multiple Valuations

As the EV/EBITDA ratio is the most common trading multiple used by professionals it will also be applied in this case. However, not all comparable companies are true equal companies. They might differ in size or growth rates. Examples of the latter are Bombardier and Embraer. As they just entered the single aisle market with high market expectations they show higher multiples than the rest of the market, hence they are excluded from the analysis. As BAE, Dassault and UAC are distorting the sample they are excluded as well. The rest of the sample, as presented in the Comparable Company section of this report, is

used to construct three different groups of comparables. All values are presented in Annex 14.

First, a weighted badge of Boeing, General Dynamics, Leonardo-Finmeccanica, Lockheed, Raytheon and Northrop Grumman is formed with a ratio of 70/20/10 (Civil Aircraft/Defence & Space/Helicopter). As a result an EV/EBITDA of 11.85 is obtained.

Second, as Boeing is the closest comparable its ratio of 12.39 is applied to Airbus' 2017 EBITDA.

Third, an Aerospace and Defence sector ratio of 11.23 gives a rather low base value of 53,567M€. At the same time the actual Airbus Group share is traded at a multiple of 11.07 and an enterprise value of 52,800 (as of 20/11/2016). This was shortly after more details about the restructuring plan were given which helped a surge of the share.

Applying the current Multiples to the forecasted Airbus EBITDA in 2017 gives a possible EV range from 80,295M€ (sector multiple) to 88,589M€ (Boeing multiple). The weighted portfolio of comparables comes to 84,756M€.

Figure 48: Sensitivity Analysis

	A: Best Case	B: Base Case	C: Worst Case
Perimeter 1: Equity Premium	4.14%	6.83%	9.52%
Permimeter 2: Marketshare WB	Chinese / Russian development fails, 0% of widebody marketshare is lost g = 1.99%	Chinese / Russian development has modest success, 7.5% of widebody marketshare is lost g = 1.61%	Chinese / Russian development has success, 15% of widebody marketshare is lost g = 1.23%

Figure 49: Possible WACC Scenarios

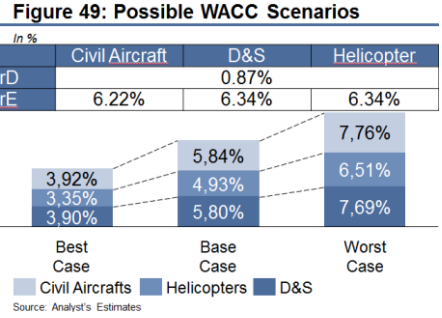
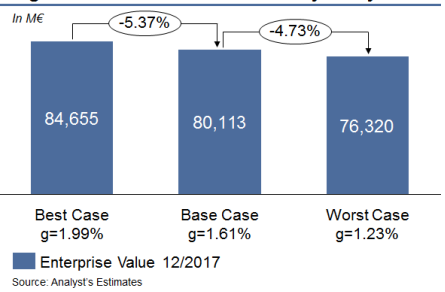


Figure 50: Growth Rate Sensitivity Analysis



Sensitivity Analysis

Clearly the highest risk of variation is coming from new market entries and their development in the future, especially in the wide body market. A graphic representation can be seen in Annex 15-17. It is assumed to be sure that the B747 will be discontinued in 2017. It has been operated for decades and any new development would cost billions of dollars. In addition, the Jumbo jet is not fitting to the company strategy of Boeing anymore. The Point-to-Point model favours two-engine wide-body jets. Present in all scenarios is the decrease of market share in the single-aisle market. It is forecasted that Airbus will lose market share from the current 63% to 55% over the next years. But how is the Russian-Chinese co-development of a new wide body jet going to evolve in times of high international tensions? The most doubtful variable in this valuation equation are market shares on wide bodies in the long-run. Obviously nobody is able to predict those accurately, hence this section is supposed to check the most feasible range of percentages. According to the market consensus, a range between 15-30% is a good proxy. This would be an equal player in the market which then would be divided into three market players. Additionally, Airbus CEO said in an interview that the wide body market would allow for an additional player. Hence, a best case is established where no market share is lost and the new market entry of the competitor fails. In a base case, the JV achieves 15% total market share. The lost part will be split between Airbus and Boeing and resulting in minus 7.5%

for Airbus. Analogue, a worst case with 30% total market share lost is tested. The market share developments will be measured in the growth rate of the civil aircraft section after the detailed valuation horizon.

Furthermore, monetary policies are impacting this valuation with the cost of capital. There might be a change from the current quantitative easing to a more tight monetary policy in the US as well as the EU. An analysis on the MCSI World and France's ten year bonds over the last ten years gave an equity premium of 4.14% which is in line with the historical premium over the last 80 years. A more recent and reasonable proxy of the future is obtained by making the same equity premium analysis on the CAC40, which is the French Equity Index. As a result, 9.52% are obtained. In line with possible change in monetary policies the previously obtained 4.14% do not seem realistic looking into the future. To establish a base case the average between those two is taken to smooth the results.

To achieve a range for the Airbus valuation three different scenarios are being investigated as presented above. Among these, two different perimeters are being used for testing the sensitivity of the results. As market shares and cost of capital are not directly related they were tested individually and presented in different graphs in order to show the vulnerability of the company to changes in each specific variable.

Finally, in the most likely DCF case, Airbus as sum-of-parts is worth 80,113M€. This valuation is confirmed by the multiple analyses performed. The lower end using the sector multiple allows for a value of 80,295M€, whereas the highest multiple, applying Boeing, reaches to 88,589M€. This premium is deserved as Boeing possesses a higher value Defense & Space business. The weighted portfolio multiple comes closest to the DCF valuation with 84,756M€. This company value seems credible as the deviation is only 9.57%.

Figure 51: Cost Of Capital Sensitivity Analysis

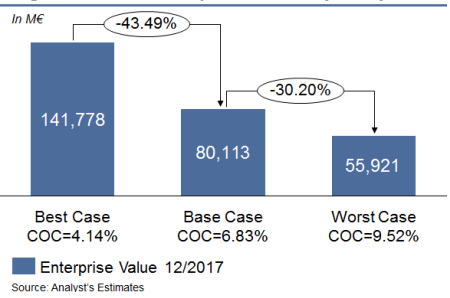


Figure 52: Multiple Analysis

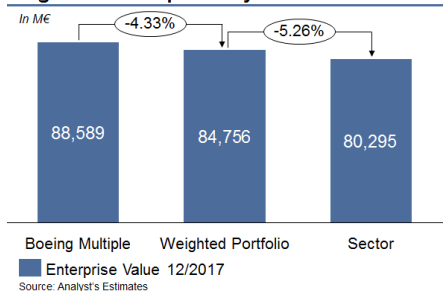
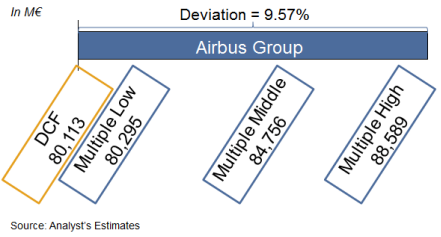


Figure 53: Company valuation range with all Angles of attack



Annexes

Financial Statements

Exhibit 1: Historical Balance Sheet

(in Mi)	FY2011	FY2012	FY2013	FY 2014	FY 2015
Assets					
Intangible assets	12,745	13,422	13,653	12,758	12,555
PPE	14,159	15,196	15,856	16,321	17,127
Investment property	74	72	69	67	66
Investments accounted for under the equity method	2,677	2,662	2,902	3,391	1,326
Other investments and other long-term financial assets	2,378	2,115	1,864	1,769	2,492
Non-current other financial assets	631	1,386	2,076	586	1,096
Non-current other assets	1,253	1,415	1,653	1,822	2,166
Deferred tax assets	4,309	4,518	3,840	5,717	6,759
Non-current securities	7,229	5,987	4,300	5,989	9,851
Non-current assets	€ 45,455	€ 46,773	€ 46,213	€ 48,420	€ 53,438
Inventories	22,563	23,216	25,060	25,355	29,051
Trade receivables	6,399	6,790	7,239	6,798	7,877
Current portion of other long-term financial assets	172	287	181	167	178
Current other financial assets	1,739	1,448	1,557	1,164	1,401
Current other assets	2,253	2,046	2,074	2,389	2,819
Current tax assets	339	458	632	605	861
Current securities	4,272	2,328	2,590	3,183	1,788
Cash and cash equivalents	5,284	8,756	7,765	7,271	7,489
o/w non-strategic part	2,284	5,756	4,765	4,271	4,489
Current Assets	€ 43,021	€ 45,329	€ 47,098	€ 46,932	€ 51,464
Assets of disposal groups classified as held for sale				750	1,779
Total Assets	€ 88,476	€ 92,102	€ 93,311	€ 96,102	€ 106,681

Equity and liabilities					
Equity attributable to equity owners of the parent					
Capital stock	820	827	783	785	785
Share premium	7,519	7,253	5,049	4,500	3,484
Retained earnings 30%Payout	471	900	2,300	2,989	6,316
Accumulated other comprehensive income	153	1,513	2,929	-1,205	-4,316
Treasury shares	-113	-84	-50	-8	-303
	€ 8,850	€ 10,409	€ 11,011	€ 7,061	€ 5,966
Non-controlling interests	20	25	43	18	7
Total equity	€ 8,870	€ 10,434	€ 11,054	€ 7,079	€ 5,973
Non-current liabilities					
Non-current provisions	9,125	9,816	10,046	10,400	9,871
Long-term financing liabilities	3,628	3,506	3,956	6,278	6,335
Non-current other financial liabilities	8,193	7,458	7,158	9,922	14,038
Non-current other liabilities	9,814	10,524	10,790	12,849	14,993
Deferred tax liabilities	1,050	1,504	1,487	1,130	1,200
Non-current deferred income	290	212	239	267	263
	€ 32,100	€ 33,020	€ 33,676	€ 40,846	€ 46,700
Current liabilities					
Current provision	5,860	6,045	5,323	5,712	5,209
Short-term financing liabilities	1,476	1,273	1,645	1,073	2,790
Trade liabilities	9,630	9,917	10,372	10,183	11,763
Current other financial liabilitie				3,480	5,021
Current other liabilities	29,357	29,898	29,626	25,222	27,037
Current tax liabilities	308	458	616	738	908
Current deferred income	875	1,057	999	1,089	1,049
	€ 47,506	€ 48,648	€ 48,581	€ 47,497	€ 53,777
Liabilities of disposal groups classified as held for sale				680	231
Total liabilities	€ 79,606	€ 81,668	€ 82,257	€ 89,023	€ 100,708
Total equity and liabilities	€ 88,476	€ 92,102	€ 93,311	€ 96,102	€ 106,681
	okay	*okay*	*okay*	*okay*	*okay*

Exhibit 2: Forecasted Balance Sheet

(in Mt)	FY2016E	FY2017E	FY2018E	FY2019E	FY2020E	FY2021E	FY2022E
Assets							
Intangible assets	14,805	18,080	20,221	21,609	22,266	22,812	23,838
PPE	18,063	19,871	21,980	24,458	25,166	25,894	26,643
Investment property	0	0	0	0	0	0	0
Investments accounted for under the equity method	0	0	0	0	0	0	0
Other investments and other long-term financial assets	2,601	3,401	3,921	4,202	4,326	4,412	4,634
Non-current other financial assets	1,295	1,582	1,769	1,891	1,948	1,996	2,086
Non-current other assets	1,857	2,268	2,537	2,711	2,793	2,862	2,991
Deferred tax assets	5,642	6,890	7,706	8,235	8,485	8,693	9,084
Non-current securities	7,546	9,216	10,307	11,014	11,349	11,628	12,151
Non-current assets	€ 51.809	€ 61.309	€ 68.439	€ 74.119	€ 76.334	€ 78.296	€ 81.427
Inventories	32,899	40,178	44,934	48,018	49,480	50,692	52,973
Trade receivables	7,933	9,689	10,836	11,579	11,932	12,224	12,774
Current portion of other long-term financial assets	224	274	306	327	337	345	361
Current other financial assets	1,676	2,047	2,290	2,447	2,521	2,583	2,699
Current other assets	2,617	3,196	3,574	3,820	3,936	4,032	4,214
Current tax assets	641	782	875	935	963	987	1,031
Current securities	3,295	4,024	4,501	4,810	4,956	5,077	5,306
Cash and cash equivalents	8,231	10,052	11,242	12,014	12,379	12,683	13,253
o/w non-strategic part	5,231	7,052	8,242	9,014	9,379	9,683	10,253
Current Assets	€ 57.517	€ 70.243	€ 78.557	€ 83.950	€ 86.504	€ 88.625	€ 92.612
Assets of disposal groups classified as held for sale							
Total Assets	€ 109.326	€ 131.551	€ 146.997	€ 158.069	€ 162.839	€ 166.921	€ 174.039

Equity and liabilities							
Equity attributable to equity owners							
Capital stock	773	773	773	773	773	773	773
Share premium	5,561	5,169	4,753	4,693	4,732	4,732	4,732
Retained earnings 30% Payout	8,830	10,333	12,700	15,462	18,128	20,854	23,596
Accumulated other comprehensive income	-6,835	-6,589	-6,247	-6,892	-9,186	-11,395	-13,807
Treasury shares	-5	-5	-5	-5	-5	-5	-5
	€ 8.324	€ 9.682	€ 11.974	€ 14.031	€ 14.442	€ 14.960	€ 15.289
Non-controlling interests							
Total equity	€ 8.324	€ 9.682	€ 11.974	€ 14.031	€ 14.442	€ 14.960	€ 15.289
Non-current liabilities							
Non-current provisions	11,159	13,628	15,241	16,287	16,783	17,194	17,968
Long-term financing liabilities	5,287	6,456	7,221	7,716	7,951	8,146	8,513
Non-current other financial liabilities	10,470	12,787	14,300	15,282	15,747	16,133	16,859
Non-current other liabilities	13,237	16,165	18,079	19,320	19,907	20,395	21,313
Deferred tax liabilities	1,442	1,762	1,970	2,105	2,169	2,222	2,322
Non-current deferred income	290	354	396	423	436	447	467
	€ 41.884	€ 51.151	€ 57.206	€ 61.133	€ 62.993	€ 64.537	€ 67.441
Current liabilities							
Current provision	6,420	7,840	8,768	9,370	9,655	9,892	10,337
Short-term financing liabilities	1,847	2,256	2,523	2,696	2,778	2,847	2,975
Trade liabilities	11,833	14,081	15,071	16,196	16,818	17,279	18,235
Current other financial liabilitie	5,021	5,021	5,021	5,021	5,021	5,021	5,021
Current other liabilities	32,185	39,306	43,959	46,976	48,406	49,592	51,824
Current tax liabilities	667	815	911	974	1,003	1,028	1,074
Current deferred income	1,145	1,399	1,564	1,672	1,722	1,765	1,844
	€ 59.118	€ 70.718	€ 77.817	€ 82.905	€ 85.404	€ 87.423	€ 91.309
Liabilities of disposal groups classified as							
Total liabilities	€ 101.002	€ 121.869	€ 135.023	€ 144.038	€ 148.397	€ 151.961	€ 158.750
Total equity and liabilities	€ 109.326	€ 131.551	€ 146.997	€ 158.069	€ 162.839	€ 166.921	€ 174.039
	okay	*okay*	*okay*	*okay*	*okay*	*okay*	*okay*

Exhibit 3: Consolidated P&L of the Airbus Group SE

(in M€)	FY2011	FY2012	FY2013	FY2014	FY 2015	FY 2016E	2017E	2018E	2019E	2020E	2021E	2022E
Revenues	49,128	56,480	59,256	60,713	64,450	65,369	79,832	89,281	95,410	98,313	100,723	105,255
COS	-42,285	-48,545	-50,895	-51,776	-55,599	-56,667	-67,434	-72,174	-77,564	-80,540	-82,751	-87,328
Gross Margin	6,843	7,935	8,361	8,937	8,851	8,702	12,397	17,107	17,845	17,773	17,972	17,927
(as % of revenues)	13.9%	14.0%	14.1%	14.7%	13.7%	13.3%	15.5%	19.2%	18.7%	18.1%	17.8%	17.0%
SGA (including depreciation)	-2,408	-2,864	-2,913	-2,601	-2,651	-4,211	-4,557	-4,980	-5,413	-5,872	-6,025	-6,208
R&D	-3,152	-3,142	-3,160	-3,391	-3,460	-4,050	-4,050	-4,050	-4,020	-4,020	-4,020	-4,020
Other Income	359	184	236	330	474	-	-	-	-	-	-	-
Other Expenses	-221	-229	-263	-179	-222	853	-167	-2,729	-2,248	-1,891	-1,806	-1,522
Financial Income	192	247	346	895	674	-	-	-	-	-	-	-
Exceptionals	-	-	-	-	-1	-	-	-	-	-	-	-
EBIT	1,613	2,131	2,607	3,991	4,062	1,344	3,324	5,049	5,864	5,691	5,821	5,877
(as % of revenues)	3.3%	3.8%	4.4%	6.6%	6.3%	2.1%	4.2%	5.7%	6.1%	5.8%	5.8%	5.6%
Disposal of goodwill						0	0	0	0	0	0	0
Disposal						0	0	0	0	0	0	0
Interest Income	377	237	168	142	183	260	317	355	379	391	401	419
Interest Expense	-364	-522	-497	-462	-551	-544	-647	-692	-744	-773	-794	-838
Other Financial Result	-233	-168	-301	-458	-319	0	0	0	0	0	0	0
Finance Result	-220	-453	-630	-778	-687	-284	-329	-337	-365	-382	-393	-419
Income Taxes	-356	-449	-502	-863	-677	-300	-846	-1,331	-1,554	-1,500	-1,533	-1,542
Net Income	1,037	1,229	1,475	2,350	2,698	761	2,148	3,380	3,946	3,809	3,894	3,916
(as % of revenues)	2.1%	2.2%	2.5%	3.9%	4.2%	1.2%	2.7%	3.8%	4.1%	3.9%	3.9%	3.7%

Exhibit 4: Restructuring Plan Impact

Estimated Base Salary Per Person	2015
Wages, salaries and social contributions	13,022,000,000 €
Number of employees on group level	136,574
Average Salary Per Person	**95,348 €**
Provision for Restructuring measures / pre-retirement part-time work	265,000,000

Source: Airbus Financial Statements 2015

Estimated Cost Savings Per Year

Country	Number of cuts	Country adjustment on salary	Estimated Salary	Indirect costs	Cost saving by Country
France	640	100%	95,348 €	190,695 €	122,044,898.74
Germany	429	100%	95,348 €	190,695 €	81,808,221.18
UK	54	100%	95,348 €	190,695 €	10,297,538.33
Spain	39	50%	47,674 €	95,348 €	3,718,555.51
Total	**1,162**				**217,869,214 €**

Note: It is assumped that indirect costs of costs centers such as IT and HR are twice the estimated salary

Exhibit 5: A350 / A380 amortization of development costs

in M$						
Year	2015	2016	2017	2018	2019	2020
Deliveries	14	28	84	120	120	120
Price	305	308	311	313	316	319
COGS	1	0.8	0.8	0.8	0.8	0.8
Discount	80%	50%	50%	50%	50%	50%
FCF	**853**	**3,451**	**10,435**	**15,026**	**15,147**	**15,313**
FCF acc.	853	4,304	14,739	29,766	44,912	60,225

USD15BN target

in M$											
Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	9M 2016	
Deliveries	1	12	10	18	26	30	25	30	27	16	
Price	320	327	335	346	375	390	403.9	414.4	428	432.6	
COGS	1.2	1.2	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.93	
Discount	80%	80%	55%	55%	55%	55%	55%	55%	55%	55%	
FCF	**77**	**942**	**1,432**	**2,662**	**4,168**	**5,002**	**4,317**	**5,315**	**4,940**	**2,897**	
FCF acc.	77	1,019	2,451	5,113	9,281	14,283	18,600	23,914	28,855	31,751	USD25BN target during 2015
Cost/Unit	384.0	392.4	318.3	328.7	356.3	370.5	383.7	393.7	406.6	402.3	

Exhibit 6: Top100 airlines analysis

N°	Airline	Boeing Total		Airbus Total		Other Total	
		In-Service	Ordered	In-Service	Ordered	In-Service	Ordered
1	Aeroflot	31	24	110	22	29	74
2	Aeromexico	64	66	0	0	63	5
3	Air Algerie	27	6	8	0	15	0
4	Air Berlin	21	0	82	2	17	3
5	Air Canada	60	78	102	0	25	45
6	Air China	179	40	180	10	0	20
7	Air France/KLM	227	24	185	35	161	8
8	Air India	41	9	66	0	0	0
9	Air New Zealand	26	6	29	14	0	0
10	Air Transat	11	0	23	0	0	0
11	Alaska Airlines	155	58	0	0	0	0
12	Alitalia	11	0	93	0	0	0
13	All Nippon	185	62	10	3	0	15
14	American Airlines	453	157	119	157	107	0
15	Austrian Airlines	11	0	29	0	42	11
16	Cathay Pacific	73	22	47	47	0	0
17	China Eastern	132	48	297	20	0	20
18	China Southern	203	26	278	3	20	20
19	Copa Airlines	77	66	0	0	12	0
20	Delta Airlines	483	79	169	131	181	75
21	Easyjet	0	0	251	172	0	0
22	Egypt Air	34	0	30	1	0	0
23	Emirates	143	185	108	63	0	0
24	Ethopian Airlines	51	26	0	12	17	2
25	Etihad Airways	37	90	80	100	0	0
26	Garuda Indonesia	88	50	25	23	31	12
27	Gol Aereos	145	71	0	0	0	0
28	International Airlines Group	149	26	219	94	0	0
29	Jet Airways	86	85	8	5	18	0
30	JetBlue Airways	0	0	159	87	60	23
31	LATAM Airlines Group	69	9	117	102	0	0
32	Lion Air	108	239	3	216	0	0
33	Lufthansa	39	20	228	146	0	0
34	Norwegian	112	155	0	100	0	0
35	Qatar Airways	71	69	95	77	0	0
36	Qantas	78	8	40	107	0	0
37	Royal Air Maroc	43	3	0	0	9	0
38	Ryanair	409	215	0	0	0	0
39	SAS	81	0	41	38	11	0
40	Singapore Airlines	56	30	52	69	0	0
41	South African	7	0	43	5	0	0
42	Southwest	718	243	0	0	0	0
43	Spirit Airlines	0	0	86	80	0	0
44	TAP Portugal	0	0	63	53	24	9
45	Turkish Airlines	151	88	171	101	3	0
46	United Airlines	563	170	152	35	0	0
47	Virgin (Atlantic, Americas, Aus	101	50	87	59	28	0
48	WestJet	118	70	0	0	0	0
49	Wizz Air	0	0	68	143	0	0

50	Azul Linhas Aereas	0	0	5	35	143	33
51	Aerolíneas Argentinas	43	20	14	2	0	0
52	TAME	0	0	10	0	10	0
53	Boliviana de Aviación	21	12	0	0	1	1
54	Hawaiian Airlines	26	0	22	22	3	0
55	Fiji Airways	5	0	4	0	0	0
56	Air Niugini	5	5	0	0	26	0
57	Iberia	0	0	83	45	0	0
58	Air Asia	0	0	175	575	0	0
59	Japan Airlines	160	17	0	31	0	32
60	Hainan Airlines	142	9	23	0	0	22
61	Korean Air	99	57	39	30	0	10
62	IndiGo	0	0	109	426	0	0
63	China Airlines	36	0	28	14	0	0
64	Asiana Airlines	22	0	51	57	0	0
65	Saudia	64	4	62	0	15	0
66	Thai Airways	47	0	37	4	0	0
67	Malaysia Airlines	57	10	26	0	0	0
68	SWISS	0	0	65	5	15	0
69	EVA Air	26	26	35	0	0	0
70	Dragonair	0	0	42	0	0	0
71	Bangkok Airways	0	0	20	0	12	5
72	Aegean Airlinies	0	0	47	0	0	0
73	Hong Kong Airlines	0	0	22	17	0	0
74	Finnair	0	0	48	14	24	0
75	Oman Air	27	24	10	0	4	0
76	SriLankan Airlines	0	0	23	4	0	0
77	Air Astana	8	3	13	0	9	0
78	TUIfly	40	63	0	0	0	0
79	SilkAir	16	38	15	0	0	0
80	Germanwings	0	0	61	0	0	0
81	Pegasus Airlines	54	5	10	75	0	0
82	Vietnam Airlines	13	3	65	10	16	0
83	Brussels Airlines	1	0	37	0	11	0
84	Porter Airlines	0	0	0	0	26	0
85	Thomson Airways	60	63	0	0	0	0
86	Air Seychelles	0	0	3	0	6	0
87	Azerbaijan Airlines	8	0	12	0	5	2
88	Air Mauritius	0	0	10	4	2	0
89	Icelandair	30	0	0	0	0	0
90	Kenya Airways	28	0	0	0	15	0
91	Philippine Airlines	6	0	46	31	0	0
92	Gulf Air	0	16	28	29	0	10
93	TAAG Angola Airlines	15	1	0	0	0	0
94	SpiceJet	25	42	0	0	16	0
95	Tianjin Airlines	0	0	23	0	72	20
96	Shenzhen Airlines	87	7	79	0	0	0
97	EuroAtlantic Airays	8	0	0	0	0	0
98	TigerAir	0	0	24	39	0	0
99	Vueling	0	0	108	56	0	0
100	NIKI	0	0	21	0	0	0

Exhibit 7: A320neo vs B737MAX81

Fuel burn	8% lower cost/seat	8% lower operating c
Seats (2-class)	165/189	162/200
Price (in M$)	107.3	110.0
Range (in km)	6,500	6,510
Speed	Mach 0.82	Mach 0.79

Source: Airbus & Boeing Homepage
Note: 1) First MAX delivery expected in 2017

Exhibit 8: A330-900neo1 vs B787-9

Fuel burn	10% lower cost/seat	
Seats (3-class)	287/440	290/420
Price (in M$)	287.7	264.6
Range (in km)	12,100	14,140
Speed	M 0.86	M 0.89

Source: Airbus & Boeing Homepage
Note: 1) First NEO delivery expected in 2017

Exhibit 9: A350-1000 vs B777-300ER

Exhibit 10: A380-800 vs B747-8

Fuel burn	21% lower cost/seat	
Seats (3-class)	366/440	365/550
Price (in M$)	355.7	339.6
Range (in km)	14,800	13,700
Speed	M 0.89	M 0.89

Source: Airbus & Boeing Homepage

Note: 1) To be replaced by 2020 from 777-9 (+60 seats +400km range) Airbus competitor is -1000 type

Fuel burn	3% lower cost/seat	
Seats (4-class)	544/853	410/605
Price (in M$)	432.6	378.5
Range (in km)	15,200	14,300
Speed	M 0.89	M 0.86

Source: Airbus & Boeing Homepage

Exhibit 11: Airbus list price forecast

Model	2016E	2017E	2018E	2019E	2020E	2021E	2022E	Perpetuity
A318	75,100,000	75,700,800	76,306,406	76,916,858	77,762,943	78,618,335	79,483,137	80,357,452
A319	89,600,000	90,316,800	91,039,334	91,767,649	92,777,093	93,797,641	94,829,415	95,872,539
A319neo	98,500,000	99,288,000	100,082,304	100,882,962	101,992,675	103,114,594	104,248,855	105,395,592
A320	98,000,000	98,784,000	99,574,272	100,370,866	101,474,946	102,591,170	103,719,673	104,860,589
A320neo	107,300,000	108,158,400	109,023,667	109,895,857	111,104,711	112,326,863	113,562,458	114,811,645
A321	114,900,000	115,819,200	116,745,754	117,679,720	118,974,197	120,282,913	121,606,025	122,943,691
A321neo	125,700,000	126,705,600	127,719,245	128,740,999	130,157,150	131,588,878	133,036,356	134,499,756
A321neo LR				140,000,000	141,540,000	143,096,940	144,671,006	146,262,387
A330-200	231,500,000	233,352,000	235,218,816	237,100,567	239,708,673	242,345,468	245,011,268	247,706,392
A330-800neo	252,300,000	254,318,400	256,352,947	258,403,771	261,246,212	264,119,921	267,025,240	269,962,517
A330-300	256,400,000	258,451,200	260,518,810	262,602,960	265,491,593	268,412,000	271,364,532	274,349,542
A330-900neo	287,700,000	290,001,600	292,321,613	294,660,186	297,901,448	301,178,364	304,491,326	307,840,730
A330-200F	234,700,000	236,577,600	238,470,221	240,377,983	243,022,140	245,695,384	248,398,033	251,130,412
A350-800	272,400,000	274,579,200	276,775,834	278,990,040	282,058,931	285,161,579	288,298,356	291,469,638
A350-900	308,100,000	310,564,800	313,049,318	315,553,713	319,024,804	322,534,077	326,081,951	329,668,853
A350-1000	355,700,000	358,545,600	361,413,965	364,305,277	368,312,635	372,364,074	376,460,078	380,601,139
A380	432,600,000	436,060,800	439,549,286	443,065,681	447,939,403	452,866,737	457,848,271	462,884,602
Increase in %	1.1%	0.8%	0.8%	0.8%	1.1%	1.1%	1.1%	1.1%
Average Price	71	91	88	85	82	83	88	89
Bulk Discount Weighted	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%

Exhibit 12: Airbus Civil Aircraft production forecast

Model	FY 2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E
	forecast	forecast	forecast	forecast	forecast	forecast	forecast	forecast
A318 (ignore)	0	0	0	0	0	0	0	0
A319 (4.88%)	26	24	22	20	15	10	5	0
A319neo	0	5	10	15	20	25	30	35
A320 (57.33%)	256	144	108	105	105	105	105	0
A320neo	48	200	270	310	310	310	310	415
A321 (37.48%)	200	205	207	140	140	140	140	0
A321neo	0	22	42	100	100	100	100	240
A321neo LR	0	0	0	30	30	30	30	30
Total	530	600	660	720	720	720	720	720
A330-200 (29.13%)	16	24	24	19	14	9	9	0
A330-800neo	0	0	0	5	10	15	15	24
A330-300 (67.96%)	38	57	52	47	42	7	7	0
A330-900neo	0	0	5	10	15	50	50	57
A330-200F (2.91%)	2	2	2	2	2	2	2	2
Total	56	84	84	84	84	84	84	84
A350-800	0	0	0	0	0	0	0	0
A350-900 (80%)	48	79	105	96	96	96	96	96
A350-1000 (20%)	0	5	15	24	24	24	24	24
Total	48	84	120	120	120	120	120	120
A380	25	25	12	12	12	12	25	25
Total	659	793	876	936	936	936	949	949

Exhibit 13: Defence & Space and Helicopter production forecast

Helicopters	2016E	2017E	2018E	2019E	2020E	2021E	2022E
Civil Deliveries	213	214	214	244	258	277	287
Military Deliveries	213	214	214	244	258	277	287
Support Activities (as % of revenues)	50%	50%	50%	50%	50%	50%	50%
Revenues (€)	€ 6,300	€ 6,400	€ 6,450	€ 7,400	€ 7,900	€ 8,600	€ 9,000

D&S	2016E	2017E	2018E	2019E	2020E	2021E	2022E
C295 Deliveries	16	16	16	16	16	16	16
A330MRTT Deliveries	4	5	6	7	7	7	7
A400M Deliveries	20	30	30	30	30	30	30
C295 Price	28.3	28.5	28.8	29.0	29.3	29.6	30.0
A330MRTT Price	202.2	203.8	205.4	207.1	209.4	211.7	214.0
A400M Price	156.7	158.0	159.2	160.5	162.3	164.0	165.9
Revenues ($)	€ 4,396	€ 6,214	€ 6,470	€ 6,728	€ 6,802	€ 6,877	€ 6,953
Revenues (€)	€ 3,381	€ 4,817	€ 5,176	€ 5,383	€ 5,530	€ 5,591	€ 5,653
% of D&S revenues	26.60%	36.77%	38.91%	39.87%	40.37%	40.22%	40.09%

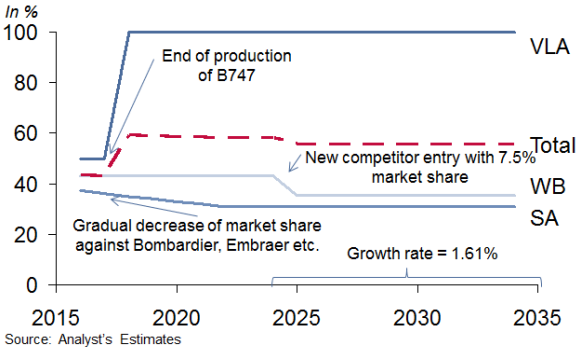
Exhibit 14: Multiple Valuations on comparable companies

Trading multiples – with enterprise value multiples						
*As of Q3 2016 **As of 30/11/2016	MarketCap**	Net Debt*	CCY	EV/EBITDA	EV**	EBITDA
Aerospace & Defense Sector				11.23		
Airbus Group (using weighted comparables w/o high growth companies)	**56,074**	**470**	**EUR**	**11.85**	**56,544**	**4,770**
Airbus (using Boeing multiple)	**58,630**	**470**	**EUR**	**12.39**	**59,100**	**4,770**
Airbus (using sector multiple)	**53,097**	**470**	**EUR**	**11.23**	**53,567**	**4,770**
(Airbus)	52,330	470	EUR	11.07	52,800	4,770
Boeing	92,920	1,490	USD	12.39	94,410	7,620
General Dynamics	53,400	1,410	USD	11.68	54,810	4,690
(UAC)	189,630		RUB	N/A	N/A	N/A
(Bombardier)	4,180	5,330	CAD	28.39	9,510	355
(Dassault)	8,470	90	EUR	20.77	8,560	412
(Embraer)	3,800	11,870	USD	39.00	15,670	401
Leonardo-Finmeccanica SpA	6,880	4,230	EUR	7.91	11,110	1,400
Lockheed	77,920	11,400	USD	13.00	89,320	6,870
(BAE)	19,150		GBP	1,166.50	1,920,000	1,640
Raytheon Co	43,790	2,360	USD	12.56	46,150	3,680
Northrop Grumman Corp	43,830	5,270	USD	13.98	49,100	3,510
http://finance.yahoo.com/quote/EADSY/key-statistics?p=EADSY						
Airbus Group FY2017 Var.1	**79,043**	**5,713**		**11.85**	**84,756**	**7,150**
Airbus Group FY2017 Var.2	**82,876**	**5,713**		**12.39**	**88,589**	**7,150**
Airbus Group FY2017 Var.3	**74,582**	**5,713**		**11.23**	**80,295**	**7,150**

EBITDA Oct-16

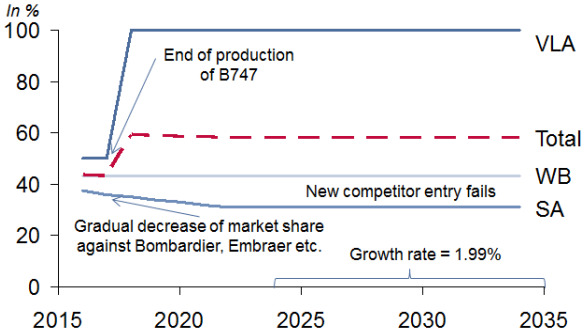
EBITDA Dec-17

Exhibit 15: Airbus Market Share Forecast - Base Case Scenario



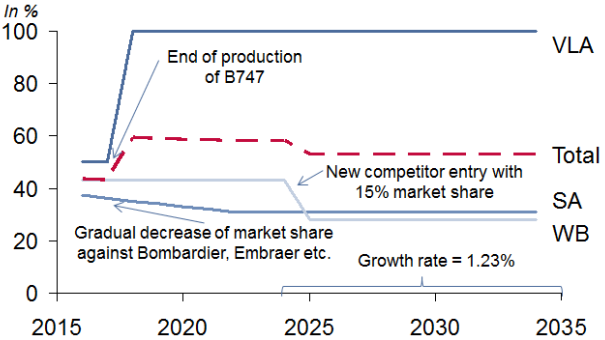
Source: Analyst's Estimates
Note: Measured as orders (averaged). Total new passenger aircraft demand: 32,425. Total new freighter aircraft demand: 645. WB market share subject to sensibility analysis

Exhibit 16: Airbus Market Share Forecast – Best Case



Source: Analyst's Estimates
Note: Measured as orders (averaged). Total new passenger aircraft demand: 32,425. Total new freighter aircraft demand: 645. WB market share subject to sensibility analysis

Exhibit 17: Airbus Market Share Forecast - Worst Case



Source: Analyst's Estimates
Note: Measured as orders (averaged). Total new passenger aircraft demand: 32,425. Total new freighter aircraft demand: 645. WB market share subject to sensibility analysis

Disclosures and Disclaimer

Research Recommendations

Buy	Expected total return (including dividends) of more than 15% over a 12-month period.
Hold	Expected total return (including dividends) between 0% and 15% over a 12-month period.
Sell	Expected negative total return (including dividends) over a 12-month period.

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